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ANTECEDENTS AND CONSEQUENCES OF APPLICANT PERCEPTIONS WITHIN AN INTERNET-BASED TESTING CONTEXT

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Industrial-Organizational Psychology

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by
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May 2008

Accepted by:
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ABSTRACT

The current study proposes and tests components of a model of applicant perceptions of Internet-based testing (IBT). Based on existing applicant reactions frameworks (e.g., Hausknecht, Day, & Thomas, 2004; Ryan & Ployhart, 2000), the model posits that actual test-taking conditions (e.g., presence or absence of a proctor, presence of absence of other test-takers), perceived test procedure characteristics (e.g., user-friendliness), and initial applicant perceptions (e.g., information privacy concerns) both directly and indirectly influence scores on a each of three composites of a selection test battery; Situational Judgment, Personality Fit, and Background Experience. Client-type (i.e., clients hiring entry-level applicants vs. clients hiring leader-level applicants) and race are examined as moderators of various proposed relationships.

The study's sample consisted of 5,675 applicants across 23 organizations. Results from mixed-models analyses provided support for the proposed framework, highlighting both single and dual mediational pathways of importance in an IBT context. Notably, results highlight information privacy concerns as an initial applicant perception variable of interest in IBT, over and above selection procedure fairness. Evidence also suggests that various mediational pathways are moderated by client type, but not race. Additionally, characteristics of actual test-taking conditions were subjected to an empirical analysis, resulting in a structure of Internet-based testing conditions that goes beyond the simple "proctored/unproctored" distinction common in the literature. Implications of the study's results for future research into IBT are discussed, as are the

ways in which the study's results can be incorporated into organizations' online selection practices.

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TABLE OF CONTENTS

Page

Table of Contents (Continued)

Page

LIST OF TABLES

Table Page

List of Tables (Continued)

Table Page

LIST OF FIGURES

Figure Page

CHAPTER ONE

INTRODUCTION

Recent technological advances have marked a change in the way organizations are approaching their personnel staffing and selection processes. One such change is an increase in the utilization of the Internet for the administration of pre-employment tests. From an organizational perspective, there are many advantages to using the Internet in selection, including time and cost savings, as well as ease of implementation (Naglieri et al., 2004). From a test-taker perspective, there are also advantages, including convenience and flexibility, for example, in that applicants can take the test in a location of their choosing. Although it is assumed that applicants will respond well to Internet-based employment tests, not much is known about the factors that actually impact this experience. As such, it is important to come to a better understanding of applicants' experiences during an online selection setting, and the impact that these factors have on important selection-related outcomes. This way, organizations can ensure that their selection practices are in fact attracting, selecting, and retaining quality applicants. One way to accomplish this task is to draw from the existing applicant reactions literature. This literature base has grown in the last few years due to an increased interest in the applicant perspective. As such, numerous antecedents and consequences of applicant reactions to selection have been identified, many of which can be applied to an online selection context.

The current study borrows from existing models of applicant reactions, using pre-established frameworks as a basis for an updated and contextually specific model of

applicant reactions to Internet-based testing. The following review begins with a summary of the general applicant reactions literature, with a focus on the description of frameworks that have been established in the field. Next, relevant information on the current status of Internet-based testing research is discussed, followed by a high-level description of the model proposed as part of the current study. Then, each of the four sections of the model is discussed in turn. Specifically, a review of the literature pertaining to actual test administration conditions in IBT is provided, followed by a review of research examining perceived procedure characteristics of interest in Internet-based testing: namely, perceptions of user-friendliness/efficiency, perceptions of the quality of the testing environment, and perceptions of the job-relatedness of the test. The subsequent section describes initial applicant perception variables of interest, focusing on information privacy concerns, a relatively under-researched construct in the IBT field. The section concludes with an overview of the applicant reactions research pertaining to two particular outcome variables: test performance and applicant recommendation intentions.

Applicant Reactions Literature Overview

Whereas much of the personnel selection literature has focused on organizational decision-making, the study of applicant reactions has received increased research attention in the last few decades (Anderson, Born, & Cunningham-Snell, 2001). In order to organize and assimilate this expanding area of research, models of applicant reactions have been proposed (e.g., Gilliland, 1993; Hausknecht, Day, & Thomas, 2004; Ryan & Ployhart, 2000). These frameworks identify situational factors relevant to the selection

context (e.g., procedural justice rules), and propose that the situational factors affect various individual and organizational outcomes (e.g., self-assessed procedure performance, organizational attractiveness) through their relationship with applicant reactions and perceptions (e.g., test-taking motivation, perceptions of fairness). The current section provides a high level overview of these models of applicant reactions, and touches on the theoretical rationale often provided to substantiate the identified relationships. For a more in depth description and review of the components and relationships specified, please refer to Ryan and Ployhart (2000) and Hausknecht et al. (2004).

In order to summarize current findings and guide the direction of future studies, authors have established frameworks outlining potential antecedents and consequences of various applicant perceptions. One such framework guiding the work of current studies is that of Ryan and Ployhart (2000). As part of their model of applicant reactions, the authors reviewed the extant literature and identified four categories of situational factors that influence applicant perceptions of selection processes and procedures. The authors describe various person characteristics (e.g., personality, previous experience), perceived procedure characteristics (e.g., procedural and interactional justice rules, length of process), job characteristics (e.g., job attractiveness, KSA requirements), and characteristics of the organizational context (e.g., selection ratio) that function as antecedents of applicant perceptions. Additionally, as part of this heuristic model, the authors distinguished between four categories of previously examined applicant perceptions: specifically, perceptions of the experienced procedure/process, of one's

affective/cognitive state during the procedure, of the procedure's outcomes, and of selection processes and procedures in general. Outcomes of interest included actual and self-assessed procedure performance, self-perceptions, perceptions of the job and organization, behavioral intentions (such as intent to accept a job offer), and actual behaviors (such as job offer acceptance). The authors further identified a set of moderators proposed to influence the link between antecedent and perceptions, and/or the link between perceptions and outcomes. These moderator variables were: hiring expectations, job desirability/organizational attractiveness, selection ratio, available alternatives, and social support/subjective norms.

In a 2004 meta-analysis, Hausknecht et al. updated Ryan and Ployhart's (2000) model by integrating additional variables into some of the previously proposed categories (e.g., including perceived test ease and transparency as perceived procedure characteristics of interest), and by reorganizing the outcome categories to include attitudes/behaviors towards the organization and work attitudes/behaviors. The authors then went on to meta-analytically test multiple links in the model. The results of these analyses generally showed support for the framework, establishing relationships between perceived procedure characteristics and applicant perceptions, as well as between applicant perceptions and multiple outcome variables. One particular relationship, that between person characteristics and applicant perceptions, was not supported; that is, there was no relationship between demographic variables and perceptions, and the relationship between personality variables and perceptions was fairly meager, with the exception of that of conscientiousness and test-motivation (r = .20). Lastly, selection context (e.g.,

actual applicants vs. hypothetical applicants) and selection stage (e.g., pretest, posttest) were identified as moderators of the link between applicant perceptions and outcomes.

Generally speaking, job-relatedness and fairness (e.g., Gilliland, 1993) are among the most frequently studied applicant perceptions variables (Hausknecht et al., 2004). As such, the principles underlying organizational justice theory are often used as theoretical justification for some of the relationships outlined above: particularly, those relationships involving the evaluation of the fairness of selection systems. Organizational justice theory, as it has been applied to the study of applicant reactions, states that individuals form evaluations of the extent to which various procedural and distributive justice rules are met or violated in a selection setting. Procedural justice rules include perceptions of formal selection system characteristics (e.g., job relatedness, opportunity to perform), perceptions of information provided during the process, (e.g., timely and informative feedback, selection information), and interpersonal treatment (e.g., interpersonal effectiveness of the administrator), while distributive justice rules include equity in the test or hiring decision outcome, equality (i.e., hiring based on ability, not job irrelevant factors such as sex or ethnic background), and needs (e.g., provision of accommodation to disabled individuals). The perceptions of justice rules are combined to form overall justice perceptions (either procedural or distributive); it is these justice perceptions that influence the individual's overall evaluation of the fairness of the selection process or outcome, which in turn affects individual and organizational outcomes such as self-perceptions and reactions during and after hiring. Additionally, research supports the notion that the justice rules are differentially related to justice perceptions; that is, justice

rules vary in the impact that they have on the formation of justice perceptions, depending on their salience in the particular selection setting (Gilliland, 1993; 1995; Madigan & Macan, 2005).

Organizational privacy theory (Stone & Stone, 1990) is sometimes suggested as an additional framework for understanding the underlying processes involved in applicant perceptions in selection (Anderson, Lievens, van Dam, & Ryan, 2004; Harris, 2006; Lievens & Harris, 2003). Organizational privacy theory is an expectancy theory-based model of reactions, and proposes antecedents and consequences of the motivation to protect individuals' privacy within organizational settings. However, with few exceptions (e.g., Bauer et al., 2006), it remains relatively underexplored in the context of applicant reactions.

Although a fruitful area of research, the applicant reactions literature has also faced multiple criticisms. One main criticism is the lack of theoretical rationale provided for the relationships that have been established in previous literature (Hausknecht et al., 2004). While organizational justice theory has guided a large segment of the applicant reactions research, other potential explanations, such as applicant attribution-reaction theory (Ployhart & Harold, 2004), organizational privacy theory (Stone & Stone, 1990), and signaling theory (Spence, 1973) have also been identified as potential theoretical frameworks to guide future research efforts. Other criticisms of the literature are that the scope of applicant perceptions variables that have been studied is relatively narrow, and that the depth of the variables that have been studied is sometimes ill-defined. Researchers (e.g., Chan & Schmidt, 2004; Ryan & Ployhart, 2000) have subsequently

challenged the field to expand the criterion space beyond justice perceptions/fairness and test-taking motivation, the two most studied variables in the reactions literature. With regards to the depth of the variables of interest, authors note that semantic clarification may be in order. For example, the terms *applicant perceptions* and *applicant reactions* are used somewhat interchangeably in the literature, and various outcome variables are often referred to as *reactions* as well. As noted by Chan and Schmitt (2004), these differences often coincide with the level of specificity with which the reactions (or perceptions) constructs are defined, and without clear delineation meaningful patterns of relationships are hard to uncover. In order to further the understanding of the literature, the level of specificity should be clearly outlined, and the terms *perceptions* and *reactions* should be used consistently. Lastly, researchers have called for an expanded research focus on the effect of applicant perceptions on actual applicant behaviors (versus applicant perceptions or intent), thereby proving that applicant reactions really "matter" from an organizational perspective (Anderson et al., 2004; Ryan & Ployhart, 2000).

The goal of the current study is to add to the applicant reactions literature by addressing some of the concerns identified above. Further, this study ties together two adjacent literatures by applying the applicant reactions framework to a specific contextual application: that is, that of Internet-based testing (IBT). It has been noted in the selection literature that the use of technology in selection is advancing faster than the empirical and theoretical evidence supporting its use (e.g., Anderson, 2003; Lievens & Harris, 2003). The practice of Internet-based testing is one specific area of concern, namely because, as stated by Ployhart (2006), "nearly every major staffing firm has adapted some form of

Internet-based testing, and many organizations have already migrated from paper to Web-based selection" (pg. 881). IBT is an attractive alternative for organizations due to a plethora of well-documented reasons including cost, convenience, and the efficiency of administration and scoring (Chapman & Webster, 2003; Tippins et al., 2006). Because organizational reliance on IBT is projected to increase, additional, well-grounded research in the area is needed to inform best practices in the field (Ployhart, 2006). Therefore, an updated and contextually-specific model of applicant reactions is somewhat timely; as approaches to selection change, models of applicant reactions to these changes should also be adapted and applied. Additional empirical attention is also beneficial due to the nature of the extant literature in this area. In a general sense, IBT research has not been well tied to other literatures, nor have reactions to IBT been examined in terms of relationships to other psychological constructs; in other words, the current research is relatively descriptive in nature.

Criticisms of one particular component of the IBT literature, reactions to new technology in selection, are similar to the criticisms of the larger applicant reactions literature. That is, this vein of research has been criticized for its opportunistic nature, reliance on student samples, lack of proposed antecedent variables, and paucity of structural and theoretical frameworks guiding future research and providing insight into the ways in which applicants react, and the rationale behind those reactions (Anderson, 2003).

In light of the aforementioned information, the current study not only provides meaningful contribution to the applicant reactions literature, but serves to better organize

and advance components of the IBT literature as well. Specifically, the current study proposes and tests components of a model of applicant reactions to Internet-based testing. The model outlined as part of this study adds to the extant applicant reactions and IBT literatures in the following ways: 1) it helps to organize the IBT literature into a meaningful framework of applicant reactions, 2) it specifies additional antecedent variables of applicant perceptions in IBT 3) it introduces a relatively new and understudied construct to the applicant perceptions domain – information privacy concerns, and ties theoretical work from organizational privacy theory, 4) it addresses an overreliance on attitudinal and intentional outcomes by including a behavioral test-taker outcome, test performance, 5) it specifies the conditions under which applicants are actually taking employment tests, and examines the effects that these conditions have on various perceptions and outcomes, 6) it examines demographics (e.g., race) as an important moderator in IBT, addressing concerns about equivalence of access for minorities, and 7) it focuses on the perceptions, intentions and behaviors of actual applicants (vs. theoretical applicants from a student sample).

On a broad level, the proposed model posits that both actual and perceived characteristics of the testing environment affect (either directly or indirectly) initial applicant perceptions, including an individual's level of information privacy concerns. These concerns in turn have an effect on the candidate's subsequent behaviors and behavioral intentions; specifically, his/her performance on the employment test and intent to recommend the organization to others as a place of employment. Moderator variables (e.g., demographics) are also proposed as potential influences on various hypothesized

relationships. In addressing the issue of semantics raised by Chan and Schmitt (2004), the current study conceptualizes the overall proposed model as a model of applicant reactions. That is, in the current study, the term *reactions* refers to the individual's overall IBT experience, as influenced by all four categories of variables included in the model (i.e., actual administration conditions, perceived procedure characteristics, initial applicant perceptions, and outcomes). The term *perception* is reserved for two categories of variables; perceived procedure characteristics, and initial applicant perceptions. The former category refers to the individual's evaluation of his/her test-taking experience, and is very narrowly defined and specific to the actual IBT context, while the latter refers to a more global perception of the IBT experience (i.e., in terms of the organization's subsequent use of the information that is gathered, as well the individual's perception of the testing process as a whole). Both categories are termed *perceptions* because they are initial and immediate evaluations of the applicants' experiences.

Please refer to Figure 1 for a visual representation of the proposed model. Each of the individual components of the model - actual test administration conditions, perceived procedure characteristics, initial applicant perceptions, and outcomes - will be discussed in detail below. The potential impact of demographic group membership will be discussed in context. The section will conclude with a description of the specific hypotheses and research questions addressed as part of the study.

Actual Test Administration Conditions

As previously stated, much of the applicant reactions literature has been examined in a broad sense, investigating reactions across multiple types of selection systems and

methods of assessment (e.g., Hausknecht et al., 2004). Because the current model is specific to one particular selection method, IBT, the selection context must be interpreted from a more granular perspective. One important consideration in studying applicant reactions to IBT, therefore, is recognition of the potential for variability in the applicant's actual test administration condition, and the effect that this actual administration condition may have on subsequent outcomes (e.g., perceptions of the testing environment, perceptions of the testing process).

The actual test administration condition refers to the settings within which applicants actually complete the employment test. One of the advantages to IBT is that it affords applicants and organizations more freedom and convenience when identifying potential test-taking locations. However, not much is known about the range of conditions within which candidates can and do access a test. As choice of and access to various test-taking locations has important implications for the standardization of the test administration process, and for the potential of inequality of access by various demographic groups, gathering information that helps to identify the actual locations that individuals take the test is important, both for practical recommendations and future research efforts.

In terms of previous conceptualizations of actual testing location, much of the recent research on IBT has focused on a *proctored/unproctored* distinction, with a particular emphasis on identifying and evaluating those components of unproctored test conditions that might threaten test integrity, or the integrity of the testing process (e.g., Morrison & Weiner, 2007; Naglieri et al., 2004; Tippins et al., 2006; Weiner, Reynolds,

Hayes, & Doverspike, 2005). Recently, researchers (e.g., Sinar & Reynolds, 2004; Wasko, Chawla, & Scott, 2007) have also begun to explore differences that exist within the 'umbrella' of unproctored testing, by categorizing unproctored settings into unproctored home and public conditions, and examining test-taker perceptions and test performance differences that exist between these conditions. This vein of research suggests that there is meaningful variation that exists among unproctored conditions that may not be sufficiently addressed through the proctored/unproctored dichotomy.

As such, an updated research focus may be informative; specifically, the field would benefit by moving beyond a simple proctored/unproctored distinction to a more in-depth conceptualization of actual test administration conditions. One example is the International Test Commission's (ITC; 2005) four modes of test administration. These modes vary not only with regards to the presence/absence of a human test administrator (i.e. proctor), but by the level of security involved in test access as well. The ITC's four proposed categories are 1) open mode (no human supervision/no test access control), 2) controlled mode (no human supervision/login and password required for authentication), 3) supervised mode (human supervision/identify authentication), and 4) managed mode (high level of human supervision/high level of control). This particular categorization creates a meaningful distinction among unproctored settings, but perhaps more importantly, allows for the examination of the potential variability occurring in multiple types of proctored settings as well. Examination of the environmental factors present in these administration modes can help guide the development of standardization processes

and recommendations, to ensure a fair and high-quality testing experience for job candidates.

Therefore, one of the initial research goals of the present study is to create a meaningful categorization scheme of the actual test administration conditions of applicants within IBT. Once the categorization is conceptualized, another main concern in IBT will be addressed; that is, the potential for differential access to these conditions based on demographic group membership (Bartram, 2000; Jones & Dages, 2003).

Perceived Procedure Characteristics

Perceived procedure characteristics refer to applicants' initial perceptions of factors that affect the quality of their test taking experience. Two important components of the test-taking experience are perceptions of the test administration process, and perceptions of the test itself. Consequences of each these variables will be reviewed with reference to general reactions towards technology in selection. This will be supplemented by a summary of the literature examining differences in perceived procedure characteristics as they vary by test administration mode, and will close with information pertaining to differential access to technology by demographic status.

Perceptions of the Process: *User-friendliness/efficiency and the Testing Environment*

Standardization of the test-taking experience has long been a concern of personnel assessment. Professional guidelines (e.g., AERA, APA, & NCME, 1999; SIOP, 2003) promote testing under "ideal" conditions for all applicants. Actual standardization of the test-taking environment, however, becomes more difficult in IBT, where applicants are able to take the test in a variety of locations with variable test environments, and in

situations under minimal organizational control. Therefore, it is imperative to evaluate both the quality of the locations that candidates are taking tests in, as well as the effects that these environments have on attitudinal, behavioral, and cognitive outcomes relevant to organizational recruitment and selection. When evaluating the quality of test-taking locations, two important variables to consider are perceptions of user-friendliness/efficiency of the online testing process and perceptions of the quality of the testing environment.

User-friendliness/efficiency. Because of the potential for differences in quality of computers and Internet accessibility, and the lack of a proximal resource for dealing with technical issues that may arise during the testing process, user-friendliness/efficiency is a variable of interest, as identified by both test-takers and test-users alike. Technical issues that have arisen during the web deployment of surveys (Chapman & Webster, 2003) and in data collection during IBT studies using student samples (Potosky & Bobko, 2004) support the notion that factors affecting perceptions of user-friendliness/efficiency may vary in the context of an applicant's recruitment and selection experience, and therefore, the effects are worthy of exploration (Potosky & Bobko, 2004). The issue has also been identified by test-takers as an important component of the IBT experience. For example, in 2003, Sinar and Reynolds evaluated 625 open-ended comments left by applicants commenting on their experiences during an online selection test. Results of a content analysis indicated that the topics of speed/efficiency and user-friendliness were the applicants' primary concerns.

User-friendliness/efficiency typically refers to the quality of the assessment process and the effects that the technological component of IBT can have on the testing experience. Research has found that perceptions of user-friendliness/efficiency are related to outcomes relevant to the recruitment and selection process. For example, in a study of applicants' reactions to an online selection procedure, Blair and Fritsche (2007) found that the experience of technical difficulties (i.e., low user-friendliness/efficiency) was negatively related to candidates' overall satisfaction with the selection process as well as their perceptions of the organization (e.g., perceived reputation of the organization, decreased intent to recommend to others the organization as a potential place to apply for a job). Sinar, Reynolds, and Paquet (2003) also found that user-friendliness and system speed were related to candidates' positive perception of a company using internet to conduct selection processes (i.e., what the authors referred to as Internet Selection Image), even when controlling for the effects of perceived job-relatedness. The relationships in this study were also moderated by previous Internet experience, such that the relationship between testing procedure characteristics and Internet selection image was stronger for individuals low in previous Internet experience. Reynolds, Sinar, Scott, and McClough (2000) found that, in a web-based application setting (but not a pencil-and-paper application setting), the amount of time taken to complete a test was negatively related to overall satisfaction with the process, indicating that applicants may expect and be sensitive to speed and convenience in a web-based setting. Lastly, with reference to a separate, but related construct, Harris, van Hoye, and Lievens (2003) found that concern over technical problems was one of the strongest

correlates with reluctance to submit information over the Internet. In summary, perceptions of user-friendliness/efficiency have been found to influence attitudes important to a selection context (e.g., reluctance to submit employment related information), applicants' perceptions of the testing experience and overall evaluation of the selection process, and candidates' subsequent perceptions of the organization as a place of employment.

Testing Environment. The second variable, quality of the testing environment, typically refers to the candidate's assessment of the quality of the environment in which he/she is taking the test. This variable has been conceptualized in terms of the extent to which the environment is free from distractions, and/or affords the applicant a test-taking environment of "reasonable comfort" in terms of the quality of lighting, room temperature, noise, availability of adequate work space, and resources (AERA, APA, & NCME, 1999). Because strict standardization of the environment becomes more difficult with remote access applications of IBT, investigation into the extent to which these factors influence various selection outcomes is wise (Waters & Pommerich, 2007).

Although findings are somewhat varied, existing research on the topic highlights the importance of the environment in selection, particularly regarding its potential effect on various types of test scores. For example, Morrison and Weiner (2007) found the quality of the testing environment to be related to scores on a sales and tenure focused attitudinal measure, but not related to scores on an applied reasoning measure. Alternatively, Huff and Michael (2007) found that the presence or absence of events that may constitute a distraction (e.g., receiving a telephone call, having the TV on) did not

have an effect on an individual's performance on a timed cognitive ability test. The authors, however, did not examine the actual effects of perceived disruptiveness on test performance; that is, individuals that indicated experiencing the event but not perceiving it as a distraction were combined with individuals that experienced the event and did perceive it as distracting. Therefore, the aforementioned results are not a definitive picture of the relationship between perceptions of the testing environment and cognitive test performance.

Actual Test Administration Conditions, User-friendliness/Efficiency, and the Testing Environment. While the previously cited literature examined perceptions of IBT experiences in general, existing research has also examined differences in perceptions of user-friendliness/efficiency and the testing environment that exist between modes of test administration. This line of research, however, has shown mixed results as to which testing locations are among the "best" in terms of the quality of the testing environment and/or perceptions of user-friendliness/efficiency.

Some studies have found no, or minimal, statistical differences between proctored and unproctored settings. For example, Morrison and Weiner (2007) found that the testing environment in proctored conditions was not perceived to be significantly better or worse than the environment in unproctored conditions (e.g., in terms of the quality of lighting, temperature, noise, space). In a 2007 study using a student sample, Huff and Michael found no statistically significant differences in usability between proctored and unproctored settings, although the average usability score for the unproctored group was a bit lower than the proctored group.

Additional research on the topic has delved a bit deeper, splitting unproctored conditions into meaningful categories (e.g., unproctored home and unproctored public conditions), and examining differences in perceptions of test-taking process characteristics that exist between all three. For example, in an entry-level customer service sample, Sinar and Reynolds (2004) found that unproctored home conditions were rated as more user-friendly/efficient than both proctored conditions and unproctored public conditions, and that both unproctored home and proctored conditions were rated as having a more suitable testing environment than unproctored public conditions. In a sample of applicants to leader-level positions, Wasko et al. (2007) found that unproctored public settings were less user-friendly/efficient than both proctored settings and home unproctored settings (which were rated as the most user-friendly/efficient). The authors also found that unproctored home settings were rated as having the best quality testing environment, followed by proctored, and then unproctored public conditions. In a 2004 study, Fallaw and Stokes examined perceptions of procedure characteristics between testing condition within the hiring organization, at the applicant's home, and at an external agency. The authors found the most positive applicant perceptions for proctored testing conditions within a hiring organization; specifically, the authors found this location to be associated with perceptions of a more consistent environment, less opportunity to fake, and more user-friendly systems than a home testing environment and sometimes more so than testing within a staffing agency. Taken together, the general pattern of results indicates that proctored and unproctored home conditions are perceived positively, although differences in the quality of proctored environments seem to vary

between studies. Results also indicate that unproctored public conditions are viewed less favorably than other conditions in terms of user-friendliness/efficiency and the quality of the testing environment. To the extent that the perceived procedure characteristics are impacting test performance, individuals taking the test in public locations may be at a disadvantage in the selection process.

Perceptions of the Test: Procedural Justice Perceptions

In addition to examining perceived characteristics of the test-taking process, perceptions of the test itself have also been examined. One highly-regarded variable has been perceived procedural justice; as previously stated, procedural justice perceptions are one of the most widely studied applicant perceptions variables (Ryan & Ployhart, 2000). Research in the context of IBT typically examines the justice rule of perceptions of job-relatedness (i.e., the extent to which the assessment content seems relevant to the job, and/or seems to be valid), although additional procedural justice rules (e.g., opportunity to perform, consistency) have been examined as well. Generally, perceptions of procedural justice of Internet-based tests have been shown to have a positive influence on multiple outcomes including fairness perceptions (Dineen, Noe, & Wang, 2004, Madigan & Macan, 2005), overall satisfaction with the selection process (e.g., Reynolds et al., 2000; Reynolds & Lin, 2003), perceptions of the organization (Blair & Fritsche, 2007; Reynolds & Lin, 2003; Madigan & Macan, 2005), and intent to accept a job offer (Madigan & Macan, 2005). In some cases, its relationship with various performance outcomes, such as non-cognitive test performance, has been examined as well (Blair & Fritsche, 2007). Additionally, perceptions of procedural justice have been shown to be

influenced by additional test procedure characteristics, such as the experience of technical difficulty (Blair & Fritsche, 2007).

Research examining the impact of actual test administration conditions on perceptions of procedural justice has typically found that proctored settings are perceived as being the most job-related, although this may be a marginal difference. For example, Wasko et al. (2007) found that proctored settings were perceived as more job-related than public settings (d=.13) but not more so than home settings.

Demographic Differences in Perceptions of Procedure Characteristics

The potential for demographic differences (and particularly differences by race) in the quality of environmental conditions remains an important consideration in the standardization of test administration (Harris, 2000). Although national surveys have indicated differences in at-home Internet-accessibility by race (e.g., NTIA, 2002), research in the context of IBT with regards to differential access to administration modes and quality testing environments is somewhat varied. Some studies (e.g., Reynolds & Lin, 2003) indicate no race differences in perceptions of procedure characteristics, while other studies (e.g., Sinar, Reynolds, & Paquet, 2003) indicate small differences by race. One particular study indicates an additional alternative; that once logged in to an online assessment minority groups may have a more positive test-taking experience than majority groups. For example, Sinar and Reynolds (2003) found that in a proctored IBT setting, African American applicants were less likely to give a negative comment about the system's speed or efficiency (d = -.23) than Caucasians were. Similar differences were also found for speed and efficiency of the system between Hispanics and

Caucasians (d = -.23). Hispanic candidates also were more likely to comment positively on the testing environment (d = .30) and about the process in general (d = .23) than Caucasian applicants.

Because of these discrepancies, further investigation into the potential for demographic differences in the quality of Internet access and of the Internet-based test-taking experience would be a beneficial addition to the field. As stated by Ryan and Ployhart (p. 591; 2000), "differences in perceptions are sometimes found; appropriate descriptions of context are needed to develop a greater understanding of when they will occur." These sentiments have been echoed elsewhere in the literature as well (Hausknecht et al., 2004; Truxillo, Steiner, & Gilliland, 2004).

Initial Applicant Perceptions

Two important and interrelated applicant perception variables are perceptions of selection fairness (i.e., procedural fairness) and information privacy concerns. Although the importance of both variables has been supported in the general reactions literature, less work has been done in terms of their contributions to the Internet-based testing literature. Because some of the previously described logistic challenges (e.g., with regards to quality of the testing environment) may amplify fairness and information privacy concerns in an IBT context, authors (e.g., Anderson, 2003; Truxillo et al., 2004; Stanton & Rogelberg, 2001), have called for additional research applying components of the organizational justice and privacy literatures to the IBT field.

In the following section, both selection fairness and information privacy concerns will be discussed in turn. The focus, however, will be on information privacy concerns, a

relatively underexplored topic in the selection literature. As such, a brief, high level overview of selection fairness is provided, with reference to additional literature. A distinction is then made between fairness and information privacy concerns, and between information privacy concerns and perceived invasiveness, all distinct, but conceptually related topics. The applicant perceptions section will conclude with a summary of the literature on the concept of information privacy concerns and its relevance to IBT.

Perceptions of Selection Procedure Fairness

Selection fairness has been one of the most studied perception variables, with a plethora of research supporting its contributions to a myriad of both "hard" and "soft" outcomes. As such, it has been marked as a significant organizational consideration (Truxillo et al., 2004) and has been reviewed extensively (e.g., Gilliland & Cherry, 2000).

Conceptual Distinctions

In the literature described below, selection fairness and information privacy concerns are sometimes studied in tandem. While some authors have suggested that they may empirically represent the same construct (e.g., Stone & Koch, 1989), more recent research suggests that they are two distinct, yet related concepts (Eddy, Stone, & Stone-Romero, 1999). Selection fairness refers to the overall evaluation of the fairness of the selection procedure (Gilliland, 1993), and is most often cited as the result of the extent to which various procedural justice rules are satisfied or violated. Typically, selection fairness is assessed in a fairly straightforward manner -- by asking individuals the extent to which a technique or selection procedure is fair for hiring applicants (Truxillo et al., 2004). Information privacy concerns, on the other hand, are a more specific evaluation of

the organization's collection and intended use of selection-related information. Information privacy concerns reflect an evaluation of the applicants' belief that his/her information is going to be used in the manner that the organization implied it would be used, whereas fairness is a more universal evaluation of the selection process (or procedure) as a whole.

It is also useful to distinguish information privacy concerns from another related construct, perceived invasiveness. Perceived invasiveness refers to an individual's assessment of a particular quality of requested information; that is, perceived invasiveness is a characteristic of the information itself. By association, techniques that request highly personal or sensitive information are often perceived as high in invasiveness. For example, a study by Stone-Romero, Stone, and Hyatt (2003) found that drug testing, lie detectors, and background checks were techniques evaluated as high in perceived invasiveness (where the nature of the information gathered by these techniques is sensitive), and that other selection techniques, such as application blanks, interviews, and work samples, were low in perceived invasiveness. Again, as information privacy concerns reflect a concern over the collection, use, and dissemination of that data, a highly invasive technique can be associated with both high or low information privacy concerns, depending on the individual's perceptions of how the organization will use that personal information (e.g., whether or not the organization was going to share the information with outside parties, or use it for purposes other than those which were originally expressed). In short, information privacy concerns and perceived invasiveness

are two separate, but related constructs. A more in depth description and review of information privacy concerns follows.

Perceptions of Information Privacy Concerns.

The desire to broaden our understanding of applicant reactions (Chan & Schmitt, 2004; Hausknecht et al., 2004; Ryan & Ployhart, 2000), combined with an increasing reliance on technology in selection, has resulted in the identification of information privacy concerns as a specific construct of interest (e.g., Bauer et al., 2006; Harris, 2006; Harris, Van Hoye, & Lievens, 2003). Defined as "the desire to control the movement of personal information" (pg. 425, Cho & LaRose, 1999), information privacy is particularly relevant to Internet-based employment tests. For example, when collected and stored online, an applicant's personal information (e.g., test scores) may be more easily accessible to unintended recipients than if it were collected by more "traditional" pencil-and-paper methods (Truxillo et al., 2004). Additionally, the electronic format of the information facilitates multiple transmissions and mass storage of what may be personal, non-anonymous data (Harris et al., 2003). Therefore, the Internet, as a data collection medium, may compromise the control (or the feeling of control) that an individual can exert over the use, retention, dissemination, and disposal of personal data, all of which are important components of information privacy (Cho & LaRose, 1999). As a result of this perceived lack of control, individuals concerned with the privacy of their personal information may not respond to a test, may respond differently to a test than they would on a computer based or pencil-and-paper version, or may withdraw from the application process altogether. As Internet privacy concerns of the general public are increasing

(Connerley et al., 2001) and have been found to influence organizationally relevant outcomes such as withdrawal behaviors and response rates to online surveys (Singer, Mathiowetz, & Couper, 1993 as cited by Cho & LaRose), additional research on the topic is appropriate.

Organizational Privacy Theory

In the extant privacy literature, particular components, or types, of privacy have been identified. For example, Lee and LaRose (1994) proposed that privacy is a multidimensional construct comprised of: information privacy (concern over the movement of personal information), physical privacy (being free from unwanted intrusion or observation), psychological privacy (having control over the release of information that would inform others of an individual's psychological state), and interactional privacy (maintaining secrecy of communication between social units). Although other researchers have confirmed the multidimensional nature of privacy (e.g., Paine, Reips, Steiger, Joinson, & Buchanon, 2007), the dimension most relevant to the scope of the current study, and that most studied in the extant organizational privacy literature, is information privacy. Research has suggested that violations to information privacy are among the most ill-received (Burgoon, et al., 1989), and may therefore be of greatest importance to an organization.

Research on information privacy concerns suggests that this particular sub-dimension of privacy is also multidimensional in nature. In a 1996 study, Smith, Milberg, and Burke created and validated a measure to assess "an individual's concerns about organizational information privacy practices" (pg. 169). During an extensive

content validation process, the authors reviewed existing privacy literature (both scholarly literature and the writings of privacy advocates) and federal law, and outlined what they found to be the underlying dimensions of information privacy concerns. From these sources of information, the authors identified five main and two tangential dimensions of information privacy. The main dimensions were: 1) collection of personal information – the concern related to amount of personally identifiable data being collected and stored, 2) internal unauthorized secondary use of personal information – that the information is being used for an additional, unintended purpose within the organization, 3) external unauthorized secondary use of personal information – the information is collected for one reason but used by people outside of the organization for another reason, 4) errors in personal information – that there is minimal protection against deliberate or accidental errors, and 5) improper access to personal information -- that individuals who are not authorized to access the data have access to it. Concerns regarding 1) reduced judgment in decision making (i.e., lack of human intervention), and 2) combining data from several sources, were identified as tangential dimensions. From this review, Smith et al. developed an initial content set that, after multiple iterative processes, resulted in a 15-item measure assessing four dimensions of organizational information privacy concerns: errors in information, the collection of information, unauthorized secondary use (both internal and external use) of information, and improper access to information.

Although organizational privacy theory was conceptualized before the advent of the Internet, many of the components of the existing models and conceptualizations of

privacy (e.g., Lee & LaRose, 1994; Stone & Stone, 1990) lend themselves nicely to this type of information sharing medium. As such, even though there has been some research conducted on organizational information privacy concerns in a general sense (e.g., Milberg et al., 2000; Stone-Romero et al., 2003), more of the literature has examined the information privacy concerns of Internet users. That is to say, a majority of the extant information privacy literature examines concerns of individuals submitting information over the Internet. Although not directly relevant to the current study, information from the consumer literature has been helpful in identifying and understanding relationships that may exist between applicants' and incumbents' information privacy concerns, characteristics of their environment that aid in the formation of these concerns, and consequences of the concerns in terms of affective, behavioral, and cognitive states. As well, research suggests that some of the aforementioned outcomes are mitigated by selection fairness. For example, Culnan and Armstrong (1999) found that when consumers were told that an organization's information sharing practices were fair, there was no relationship between privacy concerns and willingness to have personal information profiled for business use; on the other hand, when they were not provided with any such information, those who were more concerned about information privacy were less willing to have their personal information profiled.

Information Privacy Concerns of Incumbents/Applicants. Research examining Internet-related information privacy concerns of incumbents is relatively scarce. In one of the few published studies, Eddy, Stone, and Stone-Romero (1999) examined the influence of human resource information system (HRIS) characteristics on perceptions of

information privacy and fairness. In a 2x2 experimental design, the authors examined how the ability to authorize disclosure (e.g., "your personal information will not/can be released without your prior consent") and the target of disclosure (e.g., internal targets such as faculty members, versus external targets such as outside organizations) affected two major outcomes: perceived invasion of privacy, and perceived fairness of procedures associated with HRIS systems. The authors found that the release of information to an internal target was less invasive than to an external target, and that this difference was greater when there was no ability to authorize disclosure then when there was the ability to authorize disclosure. The same trends were found when fairness perceptions were the criteria of interest. Although this information is useful in identifying procedure characteristics that influence the information privacy concerns of current incumbents, the information may not be generalizeable to other important organizational procedures, such as selection processes.

To date, there have been very few studies examining information privacy concerns in the context of Internet-based selection. Sinar and Reynolds (2001) were one of the first to even peripherally examine the topic. In their 2001 study, the authors concluded that concern for information privacy (operationalized as "comfort providing personal information on a computer") was related to an applicant's likelihood of providing a positive open ended comments in a proctored online testing situation; that is, the more comfortable the individual was with providing information on the computer, the more likely he/she was to leave a positive comment (vs. not leave a positive comment).

In a 2003 study, Harris, Van Hoye, and Lievens examined information privacy concerns as they related to multiple selection-related outcomes, including reluctance to submit employment-related information over the Internet. In this descriptive study, 64 US and 56 Belgian undergraduate students were asked to rate their familiarity with the Internet, and to indicate the extent to which they agreed/disagreed with 7 items written to assess perceptions of privacy in the context of Internet-based selection. The US sample was also asked to rate the extent to which various concerns were exacerbated in an Internet (vs. paper and pencil) context (e.g., "It is probably easier to lie when giving employment-related information over the Internet than on a paper-and-pencil form."). Results from this study provided some support for the impact of privacy concerns on an individual's reluctance to submit employment information over the Internet. Specifically, two items assessing what Smith et al. (1996) would categorize as improper access, and one item tapping external unauthorized secondary use, were significantly related to an individual's reluctance to submit employment related information online.

Lastly, in a 2006 study, Bauer et al. adapted Gilliland's (1993) model of applicant reactions for an online screening context. The authors posited that information privacy concerns would be a salient feature of the selection system affecting applicant reactions through a relationship with procedural justice. In a two-part study using both student and applicant samples, the authors concluded that information privacy concerns were in fact an antecedent of fairness perceptions, and that fairness perceptions served as a mediator in the relationship between privacy concerns and organizational attraction, test-taking motivation, and intentions toward the organization.

Although not a complete picture of the impact that information privacy concerns might have in an Internet selection context, a few conclusions can be drawn from this information. First, information privacy concerns are relevant to an online selection context. The literature reviewed here suggests that these concerns influence applicants' affective and behavioral reactions to the selection process, in addition to applicants' attitudes towards the organization (e.g., Bauer et al., 2006), and that they influence (based on results from a descriptive student sample), a reluctance to submit employment-related information online (Harris et al., 2003). What's more, the paucity of research examining this construct in the context of Internet-based selection, and particularly IBT, suggests that further investigation is warranted, especially with actual applicant samples. Because of the steady increase in the use of technology in selection, and particularly in testing, research examining constructs specific to this medium is necessary, and will be useful to inform best practices in the field. Lastly, the literature examining information privacy concerns in Internet-based selection will benefit from the identification of additional antecedents to the concern; that is, what it is about the individual, the actual selection environment, or the perceived selection environment that influences these concerns.

The following section reviews literature pertaining to the last component of the model, outcome variables of interest in IBT. Specifically, information on recommendation intentions and test performance is provided.

Outcomes

Applicant reactions have typically been studied in relation to a host of outcomes, including affective consequences, behavioral intentions, and to a lesser extent, behavioral

consequences (Hausknecht et al., 2004; Ryan & Ployhart, 2000). To the extent that applicants' affective reactions, behavioral intentions, and actual behaviors affect the success of a selection system (for example, in terms of the quality of hires, the maintenance of a positive organizational image during the recruitment cycle), the consequences associated with various applicant perceptions (e.g., information privacy concerns in an Internet-based selection context) are important organizational considerations. Two important outcomes relevant to the current study are test performance and applicant recommendation intentions. Existing research on these two variables will be summarized, followed by implications of the reviewed findings.

Recently, authors (e.g., Anderson et al., 2004; Ryan & Ployhart, 2000) have stated that researchers should prove that applicant reactions really matter in a selection context, and that they have practical implications for an organization. One way of accomplishing this is to link applicant perceptions to actual behavioral outcomes. In a selection context, an immediate proximal behavioral outcome is an applicant's performance on the employment test. An individual's test scores will have a direct influence on his/her chances of moving on in the selection system, as well as his/her chances of being hired into the organization. If applicant perceptions negatively impact test performance, it may be the case that a qualified individual's chances of moving on the selection process will also be negatively impacted. Furthermore, if this relationship is impacted by demographic group membership, disparate impact may be an issue, and the organization's diversity goals may be challenged. In short, to the extent this relationship

exists, the validity and utility of the organization's selection system may be adversely affected.

Some studies have already examined the effects of applicant reactions on test performance. For example, a meta-analysis by Hausknecht and colleagues (2004) identified non-zero relationships between various applicant perceptions variables and actual test-performance. Specifically, the results indicated that test anxiety was negatively related to test performance (r = -.28, k = 6), while additional applicant perceptions (e.g., procedural justice, distributive justice, attitudes toward selection, attitudes toward tests) were positively related to test performance (r = .08 to .21; k = 6 to 28).

Additional research has also indicated that the relationship between applicant perceptions and test performance may vary for different types of items, depending on the nature of the information requested. For example, Chan, Schmitt, Sacco, and DeShon (1998) found that the job-relatedness of the test was not related to performance on a personality test, but was related to performance on a cognitive ability test. Likewise, Morrison and Weiner (2007) found that the quality of the Internet-based testing environment was related to scores on an attitudinal measure, but not on an applied reasoning measure. Future research investigating patterns of relationships that exist between applicant perceptions and item content would prove to be beneficial to both the applicant reactions and IBT literatures.

In addition to outcomes such as test performance, applicant reactions variables have also been linked to applicants' behavioral intentions, including the self-reported

intent to recommend the hiring organization to others (Arvey, Strickland, Drauden, & Martin, 1990; Hausknecht et al., 2004; Truxillo et al., 2004). For example, results from Hausknecht et al.'s meta-analysis revealed significant relationships between applicant reactions and recommendation intentions (r = .35 - .46; k = 7 to 27). The most frequently examined relationship was that of procedural fairness and recommendation intentions (r = .46, k = 27). As information privacy concerns have been conceptually linked to fairness perceptions (e.g., Eddy, Stone, Stone-Romero, 1999), the same relationship may hold true. That is, to the extent that the individual is concerned about the subsequent use of his/her personal information, he/she may also form negative impressions of the organization.

Research has shown that demographics may moderate the relationship between applicant reactions (for example, test-taking motivation) and test performance (Chan & Schmitt, 1997). Additionally, Ryan and Ployhart (2000, pg. 566) stated that "attitudes about tests might account for some of the performance differences observed between minority group members on certain selection methods." That is, the relationship between attitudes about the use of the test information (i.e., information privacy concerns) or the testing process (e.g., fairness) and test performance may differ based on demographic status. These particular types of relationships have yet to be tested.

Proposed Model, Research Questions, and Hypotheses

The current study proposes a model in which the perceived procedural characteristics of a test administration influence initial applicant perceptions (i.e., procedural fairness and information privacy concerns), which in turn influence outcome

variables in a selection context (i.e., test performance and intent to recommend the organization as a place of employment to others). Figure 1 depicts the overall model.

IBT research currently lacks a clear and meaningful classification of test administration conditions. Therefore, one of the first goals of the study is to create a meaningful categorization of test administration conditions, based upon locations in which applicants are actually completing Internet-based employment tests. Accordingly, the first two issues addressed as part of the current study are proposed as research questions, and no specific hypotheses are outlined.

First, descriptive statistics will be run to gather a unidimensional view of the administration conditions. Subsequently, the study will address the following two research questions:

> Research Question 1: What combinations of administration modes (e.g., log on, actual location, presence/absence of proctors) are most meaningful in an IBT context in terms of their effect on procedure characteristics? That is, which administration conditions can be considered "ideal" and which may be considered the "worst" in terms of perceived user-friendliness/efficiency and perceptions of the quality of the testing environment?
>
> Research Question 2: Does the relationship between actual test administration condition and perceptions of procedure characteristics differ based upon demographic group membership? Specifically, for each administration condition, are there differences in quality of Internet access based on race?

The first set of formal hypotheses drawn from the model will evaluate the direct impact of the applicants' IBT experience on important organizational outcomes. Previous studies, particularly those in the general applicant reactions literature, have found a positive relationship between applicant perceptions and behavioral outcomes such as test performance, so that the more positive the perceptions, the higher the test scores (e.g., Hausknecht et al., 2004). This relationship, however, has yet to be examined with information privacy concerns as a variable of interest. What's more, existing reactions and IBT literature call for more research examining the impact of perceptions on "hard" outcomes such as test performance. Therefore, the relationships between perceptions and test performance will be explored specifically in the context of IBT, and will include under-researched applicant perceptions variables such as information privacy concerns and procedural perceptions variables such as perceived quality of the testing environment. Additionally, the effects on scores of different content/item sets will be explored. That is, scores on a Situational composite assessing an individual's ability to make effective judgments and decisions, comprised of situational judgment type items; a Personality Fit composite comprised of items assessing dispositional factors relevant to the job in question; and a Background Experience composite assessing an individual's demonstration of personal competence in past behaviors relevant to the job, will be explored. Lastly the potential impact of demographic group membership (i.e., race) on the aforementioned relationships will also be examined. Specifically:

H1a: Both perceptions of procedure characteristics and initial applicant perceptions will be related to performance on the Situational composite.

Specifically, perceptions of the testing environment, perceptions of user-friendliness/efficiency, perceptions of job-relatedness, and initial perceptions of procedural fairness will be positively related to Situational test scores, while information privacy concerns will be negatively related to Situational test scores.

H1b: Applicant race will moderate the relationship between perceptions of procedure characteristics and initial applicant perceptions, and scores on the Situational composite. That is, existing relationships will be stronger for minority applicants than for majority group members.

H2a: Both perceptions of procedure characteristics and initial applicant perceptions will be related to scores on the Personality Fit composite. Specifically, perceptions of the testing environment, perceptions of user-friendliness/efficiency, perceptions of job-relatedness, and perceptions of procedural fairness will be positively related to Personality Fit composite scores, while information privacy concerns will be negatively related to Personality Fit composite scores.

H2b: Race will moderate the relationship between perceptions of procedure characteristics and applicant perceptions, and the Personality Fit composite score. That is, existing relationships will be stronger for minorities than for majority group members.

H3a: Initial applicant perceptions, but not perceptions of procedure characteristics, will be related to scores on the Background Experience composite. Specifically, perceptions of the procedural fairness will be positively related to

Background Experience composite scores, while information privacy concerns will be negatively related to Background Experience composite scores. Perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness will not be related to Background Experience test scores.

H3b: There will be a significant interaction between race and perceived procedure characteristics and initial applicant perceptions, and their effect on performance on the Background Experience composite. That is, there will be a significant relationship between both positive procedure characteristics and initial applicant perceptions and Background Experience test scores for minorities, but not for Caucasian applicants.

H4: Both perceived procedure characteristics and initial applicant perceptions will be related to applicants' recommendation intentions. Specifically, perceptions of the testing environment, perceptions of user-friendliness/efficiency, perceptions of job-relatedness, and perceptions of procedural fairness will be positively related to recommendation intentions, while information privacy concerns will be negatively related to recommendation intentions.

In order to test the relationships between actual test administration conditions, perceived procedure characteristics, initial applicant perceptions, and outcomes variables, a series of meditational hypotheses are proposed.

H5: As a group, the perceived procedure characteristics will be positively related to perceived procedural fairness, and negatively related to information privacy concerns.

H6: Actual administration conditions will affect initial applicant perceptions (procedural fairness and information privacy concerns) through a relationship with perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness).

H7a: Actual administration conditions will affect performance on the various test composites through a relationship with perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness).

H7b: Actual administration conditions will affect recommendation intentions through a relationship with perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness).

H8a: Perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) will affect performance on the various test composites through a relationship with initial applicant perceptions (procedural fairness and information privacy concerns).

H8b: Perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness)

will affect recommendation intentions through a relationship with initial applicant perceptions (procedural fairness and information privacy concerns).

H9a: Actual administration conditions will affect performance on the various test composites through a relationship with both perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) and initial applicant perceptions (procedural fairness and information privacy concerns).

H9b: Actual administration conditions will affect recommendation intentions through a relationship with both perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) and initial applicant perceptions (procedural fairness and information privacy concerns).

Lastly, it is possible that all of the aforementioned relationships may vary, depending on the type of organization that is hiring or the type of applicant that is applying to the hiring organization. Due to the limited research examining differences between leader and entry-level applicants and/or leader and entry-level hiring organizations, specific hypotheses have not been proposed. Alternatively, the following research question will be examined:

Research Question 3: Does the model (or do components of the model) vary between client types (where client type refers to an organization hiring for either entry-level positions or leader-level positions).

CHAPTER TWO

METHOD

Participants and Procedure

Data for the study were gathered from applicants to either entry-level customer service positions or to front-line leader-level positions at multiple organizations across a variety of industries. Although components of the application process may have differed between clients, all individuals in the current study were those that had been asked by the hiring organization to complete a pre-employment inventory.

As part of the employment process, individuals were instructed to log into an assessment platform using a system-generated username and password. Applicants were able to log in and access the test from a variety of locations (e.g., a proctored testing location internal to the hiring organization, the applicant's home, a public library), with the exact choice of locations dependent upon the organization to which they had applied. Once logged on to the testing platform, applicants were provided with a brief description of the test's content and purpose, instructions for providing responses, and the time limit allotted for test completion. After the test was completed and responses were submitted, applicants were given the option of completing a feedback questionnaire about their perceptions of the test (i.e., perceptions of job-relatedness), their perceptions of the entire online assessment (i.e., user-friendliness/efficiency, environmental suitability, information privacy concerns, fairness), and about characteristics of their actual assessment environment (e.g., test location, presence/absence of a proctor). All applicants were given the choice of completing the questionnaire (i.e., it was not

mandatory), and therefore did so of their own will. Applicants were informed that the hiring organization would not view their individual responses, and that their responses would have no effect on their progression in the application process. Of the individuals that completed the test, 86.4% chose to complete the feedback questionnaire. Both the test data and information from the feedback questionnaire were used during the course of the current study.

The final sample for whom both test and applicant perceptions data were collected was comprised of 5,675 individuals across 23 organizations; specifically, there were 4,650 entry-level applicants from 13 client organizations, and 1,025 leader-level applicants from 10 organizations. There were no cases where any individual client organization had both leader-level and entry-level applicant data; that is, all applicants to a particular client organization were either leader-level or entry-level applicants. Of those individuals that left demographic information, 63.7% were female, and the mean age was 30.10 years (*SD*=10.39). In order to test the hypotheses associated with race as a moderator variable, a trichotomous race/ethnicity category was created from available demographic data. Of the individuals that indicated their race/ethnicity, 44.0% were Caucasian, 30.7% were African-American, and 16.0% were Hispanic.

There were differences in demographic distributions by sample. Specifically, the entry-level sample had a mean age of 28.07 years (*SD*=9.44), a greater percentage of minority applicants (40.6%, 39.7%, and 19.7% Caucasian, African-American, and Hispanic, respectively), and was comprised mostly of females (73.5%). The leader-level

applicants were mostly male (80.7%), Caucasian (83.9%), and had a mean age of 40.13 years (*SD*=8.92).

Measures

As a preface to the description of measures used in this study, it is important to note that because this was an applied data collection effort across multiple organizations and industries, there were restrictions to the type and number of items that could be presented to applicants. Therefore, the measurement approach used here focused on a parsimonious item set, at times utilizing single item measures. The items from this survey, with the exception of those assessing information privacy concerns, were culled from a larger subset of items used in previous applied research studies (e.g., Sinar & Reynolds, 2004; Wasko et al., 2007). The decision criteria used to select the items for this study included face validity and content link to the construct in question, adequate variance as exhibited by means and standard deviations from archival data, factor loadings from exploratory factor analyses completed during previous research investigations, and additional item parameters such as item-total correlations and internal consistency reliability estimates.

Demographics. Demographic information was captured, per EEOC guidelines, within the assessment portal. That is, as part of the application process, applicants were requested to provide their birthdate (to calculate age), gender, and race (please refer to Appendix A).

Test Scores. Depending on the job to which they were applying, applicants may have taken one of two tests: a multi-format assessment developed for leadership

positions, or a multi-format assessment developed for entry-level customer service positions. Both tests contained three measurement areas: a composite assessing an individual's ability to make effective judgments and decisions, comprised of situational judgment type items; a personality composite comprised of items assessing dispositional factors relevant to the job in question; and a background experience composite assessing an individual's demonstration of personal competence in past behaviors relevant to the job.

Each applicant received a single score for each of the three composite areas. That is, each individual received a Situational score, a Personality Fit score, and a Background Experience score. Please refer to Appendix B for example items.

Intent to Recommend. Recommendation intentions were measured with a one item, dichotomous forced-choice response (as shown in Appendix C). When asked, "Would you recommend employment in this organization to others?" applicants responded either "yes" or "no." A dichotomous response option was provided to potentially decrease the likelihood of method bias among variables assessed with the feedback survey. It is important to note, however, that there are likely better ways to potentially control for method bias than dichotomization (see Podsakoff, MacKenzie, Podsakoff, & Lee, 2003).

The procedure characteristics and initial applicant perceptions variables were assessed within the voluntary feedback questionnaire that applicants were asked to complete after the employment test. All items, unless otherwise noted, were rated on a 5

point Likert-type scale with anchors ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*).

User-friendliness/Efficiency. Perceptions of user-friendliness/efficiency were assessed with a three item scale. The internal consistency reliability estimate for the scale was .72. An example item is, "The online process was a user-friendly way of completing the inventory." Please refer to Appendix D.

Testing Environment. Perceptions of the quality of the testing environment were measured with a two item scale (as referenced in Appendix D). The items were based on wording provided in professional guidelines (e.g., AERA, APA, & NCME, 1999), and have previously been used to assess applicant perceptions of the testing process in applied settings (e.g., Sinar & Reynolds, 2004). As an example, applicants were asked to indicate the extent to which they disagree/agree with the statement, "Environmental conditions in my assessment location (for example, noise, lighting, adequate space) were good." The internal consistency reliability estimate for the scale was .72.

Procedural Justice Perceptions. The three items used to measure procedural justice perceptions were adapted from the Job-relatedness-Predictive, Job-relatedness-Content, and Chance to Perform subscales of Bauer et al.'s (2001) Selection Procedural Justice Scale (SPJS; more specifically, of the SPJS's Structure Higher-Order Factor scale). One item for each dimension was chosen based on cumulative evidence from previous applied studies. That is, in order to create a parsimonious applied survey instrument, one item was chosen to represent each facet, based on that item's factor loading, mean, and standard deviation. Internal consistency reliability for all items across

the three facets was .72. An example item is "This inventory measured skills and capabilities relevant to the job in question." Please refer to Appendix D.

Selection Procedure Fairness. Selection procedure fairness (i.e., procedural fairness) was assessed with a one item measure (as show in Appendix E), "The process was fair." Individuals rated the extent to which they *Strongly Disagreed* to *Strongly Agreed* with this statement. The item is high in face validity and similar to items used in previous studies (e.g., Gilliland, 1994).

Information Privacy Concerns. Information privacy concerns (i.e., concerns over the collection, use, and dissemination of personal information) were assessed using a three-item measure created for the current study. The items were created to assess three of the four facets of information privacy concerns outlined by Smith et al. (1996): collection of information, unauthorized secondary use of information (both internal and external use), and improper access to information. The fourth facet (errors in information) was not included because of space limitations in the survey, and due to the sensitive nature of its content. An example item is, "I am confident that the data collected by this online assessment will be used only for hiring purposes." The items were consistent with those used elsewhere in the field to assess information privacy concerns (e.g., Fallon, Gilliland, Groth, & Ferreter, 2002), and can be found in Appendix E. The items in this measure were reverse scored such that higher scores on the scale indicate greater information privacy concerns. Alpha for this scale was .78.

Actual Test Administration Conditions. The actual test administration conditions of applicants were assessed with two forced-choice items that asked candidates to

identify the testing locations they used to access the system. Testing location options were based on those used in a 2002 NTIA study (e.g., my home, someone else's home, school, public library). In order to differentiate between locations, individuals were asked to indicate whether they took the test in a location on-site at the organization to which they were applying, or at an external location. Location choices were provided for each item (i.e., on-site or external options). Three additional dichotomous items (assessing the presence/absence of a proctor, the presence/absence of other individuals completing the same or similar employment inventory, and whether or not the individual had to log on to the system) were used to address Research Questions 1 and 2, and to create a meaningful test administration condition categorization scheme. Please refer to Appendix F.

Database Construction

The following section outlines the creation of the current study's data set. Specifically, formation of the outcome variables (i.e., the three test composite scores) is described, followed by the development of the independent/mediating variables (perceptions of procedural justice and initial applicant perceptions).

Outcome Variables: Test Composite Scores

Both the leader-level and entry-level tests were scored according to standard scoring procedures (as outlined by Development Dimensions International, the test developer). There was one unique aspect to the test scoring, however, that should be noted. Although the ultimate outcome of each test was a single score on each of the three composites, the number and type of items used to create the composites differed between

tests; therefore, a standardization approach that would avoid differential weighting for various measures across the two samples was required. Additionally, as client type (i.e., whether the client was hiring for leader-level or entry-level positions) was a moderator in all of the analyses, it was imperative that the relationships between the independent variables (IV) and the test composite scores could be meaningfully compared across client type. As the typical test scoring procedures (e.g., dividing a mean difference by the pooled standard deviation and thus setting the scale mean to zero, standard deviation to one) would negate those differences, an alternative scoring method was necessary. First, items were scored according to typical scoring rules. Then, the mean of the items comprising a scale was divided by the scale's standard deviation as a method of standardization (as opposed to dividing a mean difference by the pooled standard deviation and thus setting the scale mean to zero, standard deviation to one). As a result of this particular standardization approach, the means were *not* set to zero, but the standard deviations were set to one; thus, meaningful differences in the IV to test composite score relationship could be distinguished between client types, for each of the three composites.

Once the test scores had been created for leader-level and entry-level client samples, all test data, demographic information, and feedback survey information were combined into one dataset. Cases missing over 50% of the feedback survey data were immediately removed from the analysis sample (N =12 cases, or 0.2%).

Perceived Procedure Characteristics and Initial Applicant Perceptions

In order to establish the feedback survey items' underlying factor structure, the appropriate items were standardized within-client (because of their non-zero ICCs) and subjected to a Principle Components Analysis (PCA) with promax rotation. This approach was taken (instead of a Principle Axis Factoring approach) due to the formative nature of the data and because of constraints within the measurement tool itself (i.e., a lack of flexibility in scale composition). A priori hypotheses were for a potential four factor structure, and thus four factors were forced on the model. Results indicated a relatively clean four factor structure, with those items relating to perceptions of the testing environment, perceptions of user-friendliness/efficiency, perceptions of job-relatedness, and information privacy concerns each loading on their appropriate factor (or grouping). The first factor, perceptions of user-friendliness/efficiency accounted for 40.89% of variance and had an eigenvalue of 4.50. The second factor, information privacy concerns, accounted for 12.50% of variance and had an eigenvalue of 1.38. Perceptions of job-relatedness (the third factor) accounted for 9.48% of variance and had an eigenvalue of 1.04, while the last factor, perceptions of the testing environment, accounted for 6.66% of variance and had an eigenvalue of .73. Please refer to Table 1 for the item level factor loadings as indicated by the pattern matrix. The perceptions variables were then created by calculating the mean of the appropriate items. The variables were standardized across clients, and cases with univariate outliers were removed from the dataset (N = 78, or 1.4%). The unstandardized scales were used for all analyses.

Once the final dataset had been constructed and cleaned (but before a more formal analysis plan could be established) it was imperative to ascertain whether or not nesting of the dependent variables (DVs) was occurring within clients, or whether the variation in responses was relatively equally distributed across clients. This finding would establish whether the study's hypotheses could be tested using regular regressions, or if a multi-level modeling approach was necessary. Therefore, ICCs were calculated for each of the dependent variables in the model: Situational, Personality Fit, and Background Experience test composite scores, information privacy concerns, perceptions of procedural fairness, perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness. In order to accomplish this, a mixed-level model was run on the null model to establish a baseline level of performance on the DV. The ICC was calculated by dividing the intercept variance (i.e., between-client variability) by the sum of the intercept and residual (i.e., within-client) variance. The resulting non-zero values (please refer to Table 2) indicated that individual performance was in fact dependent on the client, providing justification for conducting mixed model analyses during the formal testing of hypotheses.

Hypothesis Testing

The hypotheses referencing recommendation intentions as a dependent variable of interest were not tested as part of the current study (i.e., Hypotheses 4, 7b, 8b, and 9b). These particular hypotheses were not tested because of the small number of individuals indicating they would NOT recommend the hiring organization as a place of employment

(i.e., only 0.8% of the sample). The inequality of responses in the dichotomous outcome did not afford the appropriate use of statistical analyses.

One of the study's goals was to identify a manageable categorization system for Internet-based test administration conditions beyond those previously used in the extent literature. In order to empirically address this question, a multivariate GLM was conducted where the set of three perceived procedure characteristics (perceptions of user-friendliness, job-relatedness, and the testing environment) was regressed on a variety of nominal test administration condition variables and their associated two and three-way nominal interactions (e.g., between actual test administration conditions such as presence/absence of a proctor, log on/no log on, internal/external locations and presence/absence of others). Results from this particular analysis were used to develop an IBT administration condition categorization system. This new variable was used as a predictor in multiple hypotheses throughout the course of the study.

A mixed-models analysis approach was used to test the study's remaining hypotheses. Here, hypothesis testing was split into two sets of analyses in order to maximize the use of available data. Those hypotheses that included the actual test administration condition as an independent variable were included in one set (i.e., Hypotheses 6, 7a, and 9a), and those that did not were included in another (i.e., Hypotheses H1a, H1b, H2a, H2b, H3a, H3b, H5, and H8a). This was done because one distinction between test administration conditions could result in a specific subsample of applicants, while another plausible distinction would result in a completely different subsample. Therefore, if included in the model, the results of *all* analyses would be

dependent on the empirically-driven IBT administration categories. The decision was therefore made to maximize the use of available data where appropriate, and not to constrain analyses that did not include actual test administration condition as an independent variable.

In testing each particular hypothesis (or the links associated with that hypothesis, in the case of proposed mediation), appropriate fixed effects were specified for the model. For each direct link, the model with both the main effects and the interaction terms between the IVs and client type was run first. This was done to test for potential differences in the IV to DV relationship between the clients hiring for leader-level positions and clients hiring for entry-level positions. If there was a significant interaction, the interaction terms were removed from the model, the file was split by client type, and a regression with only the main effects was run. If there were no interactions by client type, the same "main effects only" model was run, but the file was not split by client type. For those hypotheses that identified race as a potential moderator variable, interaction terms between each of the IVs and race were entered in addition to the main effects. The same follow-up analyses were run, as outlined above for client type interactions. In all analyses, client-type was a Level 2 predictor, while remaining independent variables were Level 1 predictors. Only random intercepts were specified for all models.

The appropriate regression coefficients from the aforementioned analyses were then used to test for the possibility of mediation in accordance with the process rules outlined by Baron and Kenny (1986). Specifically, for each instance of proposed

mediation, three sets of analyses were run: the dependent variable (DV) was regressed on the independent variable (IV), the mediating variable (MV) was regressed on the IV, and lastly, the DV was regressed on a set containing both the IV and MV. This was done to establish four necessary regression coefficients: the simple coefficients of the IV to DV (i.e., the total effect) and the IV to MV (part of the indirect effect), as well as the partial coefficients of the IV to DV (i.e., the direct effect) and the MV to DV (which is used to calculate the indirect effect). From this information, the indirect effect is calculated as the product of the IV to MV and MV to DV coefficients, and tested for significance according to the Sobel test (1982).

CHAPTER THREE

RESULTS

Descriptive statistics and alpha coefficients for the continuous variables in the study are outlined in Table 3. As depicted in Table 3, the internal consistency reliability estimates for the unstandardized independent variables were over .70, and therefore deemed acceptable by industry standards (Nunnally, 1978). Additionally, the perceived procedure characteristics and initial applicant perceptions variables were fairly negatively skewed, as reflected by means ranging from 4.00 to 4.53 on a 5 point scale. Lastly, because there was significant variance both within and between clients on multiple independent and dependent variables, typical total variance correlations are not reported. With nested values, between and within-client correlations could be very different from one another. These differences would not necessarily be reflected by the total correlation: as such, this value would be a misleading indicator of an IV to DV relationship.

The following sections address results of the study's hypotheses. First, the results for Hypotheses 1a through 3b, 5, and 8a (i.e., the set of hypotheses that do not include actual test administration condition as an IV) are presented. This will be followed by a description of the analyses completed to address Research Questions 1 and 2, and the statistical results of that endeavor. Lastly, the results of those hypotheses that *did* include actual test administration condition as an IV (i.e., Hypothesis 6, 7a, and 9a) are presented. For each hypothesis, information is structured such that main effects are presented first, followed by those instances where client type moderates the IV to DV relationship.

Again, Hypotheses 4, 7b, 8b, and 9b (i.e., those with recommendation intentions as a dependent variable) were not tested.

Hypothesis 1a through 3b

In order to test the hypothesis that test scores would be affected by perceived procedure characteristics and initial applicant perceptions, each test composite score was regressed on the block of independent variables in a mixed model analyses. Results, presented in Tables 4 (for main effects) and 5 (for qualified effects) indicated general support for the hypotheses. Additionally, a few of the relationships differed between client types.

Hypothesis 1a, that perceptions of the testing environment, perceptions of user-friendliness/efficiency, perceptions of job-relatedness, and initial perceptions of procedural fairness would be positively related to Situational test scores, and that information privacy concerns would be negatively related to Situational test scores, received partial support. As shown in Table 4, perceptions of user-friendliness were significantly related to Situational test scores, so that the more user-friendly the testing experience, the higher the scores on the Situational composite. Although significant, the relationships between job-relatedness and Situational scores and information privacy concerns and Situational scores were not in the hypothesized directions. That is, job-relatedness was found to be negatively related to the Situational test composite score, while information privacy concerns were positively related to test scores; individuals scored lower on the Situational composite when they thought the test was very related to the job, and when they were confident that the organization was going to use the test

information for the appropriate purposes. There was no relationship between perceptions of the testing environment or fairness, and test scores on this particular composite.

Hypothesis 1b was not supported; race did not serve as a moderator in the perceptions-Situational test score relationship (e.g., $F(2, 5061.78) = 1.79$, $p = .17$ for a the strongest interaction, race by information privacy concerns).

Hypothesis 2a, that perceptions of procedure characteristics and initial applicant perceptions would be related to scores on the Personality Fit composite received fairly strong support. As hypothesized, perceptions of user-friendliness and job-relatedness were positively related to the Personality Fit composite, while information privacy concerns were negatively related to scores on the Personality Fit composite. That is, high scores on the personality composite were associated with a user-friendly/efficient test-taking experience, perceptions of the job relatedness of the test, and the perception that the organization was going to use test-related information appropriately. Contrary to the hypothesis, however, fairness was not significantly related to test scores.

In this same set of analyses, client type was found to moderate the relationship between perceptions of the testing environment and scores on the Personality Fit test composite, $F(1, 5063.90) = 6.12$, $p = .01$. For clients hiring for leader-level positions, the relationship was positive and significant, such that a quality test-taking environment was associated with higher scores on the Personality Fit composite. For clients hiring for entry-level positions, the relationship between variables was not significant.

Hypothesis 2b, examining differences in the perceived procedure characteristic to Personality Fit test score relationship by race, was not supported (e.g., $F(2, 5066.06) = 1.35$, $p = .26$ for a the strongest interaction, race by information privacy concerns).

Hypothesis 3a also received mixed support. Specifically, per the hypothesis, greater concern over information privacy was related to lower Background Experience test scores. Contrary to the hypothesis, however, perceptions of fairness were *not* related to scores on this composite. The hypothesis also stated that perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness would not be related to Background Experience test scores. This portion of the hypothesis was also partially supported; generally, perceived procedure characteristics were not related to Background Experience test scores, with the exception of job-relatedness which was in fact significantly positively related to scores on the Background Experience composite. That is, stronger job-relevance perceptions were linked to higher Background Experience test scores. These relationships were unqualified by client type, with two exceptions. First, client type moderated the relationship between user-friendliness and scores on the Background Experience composite, $F(1, 5080.94) = 4.20$, $p = .04$, such that the relationship was not significant for clients hiring for leader-level positions, but was significant for clients hiring for entry-level positions. In fact, high scores on perceived user-friendliness/efficiency were associated with higher scores on the Background Experience test composite for entry-level clients. Client type also moderated the relationship between perceived quality of the test-taking environment and Background Experience test scores, $F(1, 5067.46) =$

4.86, p = .03. Although the relationship between quality of the test-taking environment and Background Experience differed between client-types, neither of the simple slopes were significantly different from zero at the p <.05 level.

Hypothesis 3b, predicting a race as a significant moderator in the perceptions-Background Experience test score relationship, was again not supported (e.g., F(2, 5065.79) = 1.69, p = .19 for a the strongest interaction, race by user-friendliness/efficiency).

In summary, Hypotheses 1a through 3b received mixed support. Overall, the results indicate that both job-relatedness and information privacy concerns are significant predictors of test scores, while perceptions of procedural fairness are not. These results are consistent across Situational, Personality Fit, and Background Experience test composites and between both leader-level and entry-level client types. Interestingly, job-relatedness is negatively related to Situational test scores, and positively related to scores on the other two test composites. This same pattern holds true for information privacy concerns; while positively related with scores on the Situational test composite, information privacy concerns are negatively related with performance on the other two test composites. That is, the more a test is perceived to be related to the job, and the more individuals believe the organization is using test-related information appropriately, the lower the Situational test scores, and the higher the Personality Fit and Background Experience test scores. The non-significant relationship with fairness is also consistent across test composites and between client types.

Hypothesis 4

Hypothesis 4 (that perceived procedure characteristics and initial applicant perceptions would be related to the applicants' recommendation intentions) was not tested.

Hypothesis 5

Hypothesis 5 stated that perceived procedure characteristics would be positively related to perceived procedural fairness, and negatively related to information privacy concerns. As indicated in Tables 6 and 7, this hypothesis received full support. Again, in the description below, main effects are presented first, followed by a description of the significant interactions.

All three perceived procedure characteristics (perceptions of procedural justice, perceptions of user-friendliness efficiency, and perceptions of the testing environment) were positively related to perceptions of fairness. For example, perceptions of the testing environment were related to perceptions of procedural fairness such that better quality environments were associated with more positive perceptions of the selection procedure, $t(5078.11) = 4.56$, $p < .01$. Additionally, client type moderated both the job-relatedness to fairness and user-friendliness to fairness relationships, $F(1, 5067.58) = 14.96$, $p < .01$, and $F(1, 5034.67) = 24.64$, $p < .01$, respectively. Specifically, the positive relationship between job-relatedness and fairness was stronger for clients hiring for leader-level positions than it was for clients hiring for entry-level positions, while the positive relationship between user-friendliness and fairness was not as strong for clients hiring for

leader-level positions as it was for entry-level positions (please refer to Table 7 for appropriate simple effects).

In further support of the hypothesis, perceptions of job-relatedness and perceptions of the testing environment were negatively related to information privacy concerns across both client types; that is, the more the test was perceived to be related to the job, and/or the better the quality of the test-taking environment, the less the individual was concerned about the privacy of his/her test information. Additionally, client type moderated the relationship between user-friendliness/efficiency and information privacy concerns, $F(1, 4983{,}88) = 20.62$, $p < .01$, such that the relationship between variables was significantly stronger in clients hiring for entry-level positions than it was for clients hiring for leader-level positions. For both client types there was a negative relationship such that a more user-friendly/efficient testing process was associated with less concern over the privacy of test-related information.

Hypothesis 8a

Hypothesis 8a proposed that initial applicant perceptions (i.e., information privacy concerns and perceptions of procedural fairness) would mediate the relationship between perceived procedure characteristics and scores on the test composites. Main effects associated with the potential mediating pathways can be found in Table 8. The coefficients for those pathways where client type serves as a moderator can be found in Table 9. Again, the possibility of mediation was detected using the process steps outlined by Baron and Kenny (1986). When appropriate, the resulting indirect effects were tested for significance as outlined by Sobel (1982).

First, results indicated that fairness does not serve as a mediator between any of the three perceived procedure characteristics (i.e., perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) and performance on any of the three test composites (i.e., Situational, Personality Fit, and Background Experience test scores).

Results do support, however, the initial applicant perceptions variable of information privacy concerns as a mediator for a variety of pathways. For example, information privacy concerns partially mediate the relationship between job-relatedness and performance on the Situational test composite, the Personality Fit test composite, and the Background Experience test composite. The percent of the total effect accounted for by that indirect effect ranges from 16.2% (for information privacy concerns mediating the perceptions of job-relatedness to Situational composite score relationship) to 30.0% (for information privacy concerns mediating the perceptions of job-relatedness to Personality Fit composite score relationship). Information privacy concerns also partially mediate the relationship between perceptions of the testing environment and the three test composite scores. Again, the percent of the total effect accounted for by the indirect effect ranged from 7.4% (for information privacy concerns mediating the perceptions of the testing environment to Background Experience test score relationship) to 20.6% (for information privacy concerns mediating the perceptions of the testing environment to Situational test score relationship).

While the previous results were unqualified by client type, whether or not the mediational pathways between user-friendliness (IV), privacy (MV), and test scores (DV)

were significant did depend on client type; specifically, it was the user-friendliness to privacy portion of the indirect effect that differed between client types, $F(1, 4983.88) = 20.62$, $p = .00$. Here, privacy served as a significant mediator between user-friendliness and both Personality Fit and Background Experience test scores, and as a suppressor variable between user-friendliness and Situational test scores for clients hiring for entry-level positions. The mediating effect accounted for 36.8% of the total effect for the relationship between user-friendliness/efficiency and scores on the Personality Fit test composite, and 35.2% of the total effect for the relationship between user-friendliness/efficiency and scores on the Background Experience composite. For clients hiring for leader-level positions, none of the above mentioned mediational pathways were significant.

A more direct test of the moderated mediation (i.e., whether or not the entire mediational pathway in one group was significantly different from the mediational pathway in another group) would be to compare the difference in the indirect effects between client types. This difference in coefficients can be tested for significance using a formula from Cohen et al. (2003) for testing the difference between independent regression coefficients. A significant difference would indicate that the entire mediated effect was qualified by client type. As *Z* scores were greater than/less than +/-1.96 (please refer to Table 8), all three examples of mediation for user-friendliness (IV), privacy (MV) and test scores (DV) significantly differed between client types at the $p<.05$ level.

Hypothesis 8b

Hypothesis 8b, that perceived procedure characteristics would affect recommendation intentions through a relationship with initial applicant perceptions, was not tested.

The next section describes the outcome of analyses conducted to address the study's research questions. The categorization scheme that was identified during these analyses was then used in the remainder of the hypotheses, which are presented last.

Research Question 1 and 2

The goal of the study's first research question was to identify a combination of administration modes that was empirically meaningful in an IBT context. In this regard, the goal was to define categories of administration modes according to variance in "quality," with quality quantified as perceived procedure characteristics (i.e., user-friendliness/efficiency, quality of the testing environment, and procedural justice perceptions). Previous research has shown that perceived procedure characteristics are related to important selection related outcomes (e.g., test performance, organizational attraction); therefore, identification of administration modes that vary in quality may be a useful way to increase understanding of IBT, as well as a way of informing best practices in test administration.

In order to address the research question, a multivariate GLM was run. Here, the three perceived procedure characteristics were regressed on a block of three-way and two-way interactions and their associated main effects. The sets of interactions were created from four nominal variables (i.e., whether or not the individual needed to log on

to access the test, the actual location he/she was in [onsite vs. external locations], presence/absence of proctors, presence/absence of other individuals taking the same or similar test) and were determined based on rational choice and potential practical implications. As there were no significant three-way interactions, the three-way interactions were removed from the initial model, and the model was re-run with only two-way interactions and main effects. This resulted in two sets of marginally significant two-way interactions ($p<.10$). One of these interactions was both empirically distinct and practically relevant, and was the most parsimonious (and meaningful) way of clustering the variables – the interaction between presence/absence of a proctor and presence/absence of other individuals taking the same or similar test, $F(3, 4535) = 2.54$, $p = .06$. Here, the main differences between test administration conditions were in the quality of the testing environment $F(1, 5596) = 4.57$, $p = .03$, with individuals completing the test alone reporting a better quality test environment than individuals taking the test with others, and individuals taking the test in a proctored environment reporting a better quality environment than individuals taking the test in an unproctored environment. Those individuals taking the test with others in an unproctored environment reported the lowest perceived quality of the testing environment. The interaction term was then used to create a variable with four actual test administration condition categories: taking the test in an unproctored environment alone (unproctored/alone), taking the test in an unproctored environment with others (unproctored/others), taking the test in a proctored environment alone (proctored/alone), and taking the test in a proctored environment with

others (proctored/others). This new categorical variable was used as part of the remaining hypothesis tests.

In order to identify whether the relationship between actual test administration conditions and perceptions of procedure characteristics differed based upon race, the three perceived procedure characteristics were regressed on the three-way interaction between race, presence absence of a proctor, and whether the individual took the test alone or in the presence of other individuals taking the same or similar test, as well as on the two-way interactions and main effects associated with those variables. The three-way interaction was not significant, indicating that there were no differences in quality of Internet access (at least between the four administration conditions) based upon race, $F(6, 9082) = 1.08$, $p = .38$.

Hypothesis 6 and Hypothesis 7

Both Hypothesis 6 and Hypothesis 7 posited partial mediation. These two hypotheses stated that their respective outcome variables (either initial applicant perceptions or test scores) would differ based on the actual test administration condition, through a relationship with perceived procedure characteristics. Again, the possibility of mediation was detected using the process steps outlined by Baron and Kenny (1986). The resulting indirect effect was then tested for significance as outlined by Sobel (1982). To further test whether or not the mediated effects were qualified by client type, the differences in coefficients were tested for significance using the formula from Cohen et al. (2003) that tests the difference between independent regression coefficients. Additionally, it is important to note that each of the mediational pathways described are

associated with one (of the four) test administration conditions. The actual test administration condition chosen was the one that served as a driving force for the indirect effect in each particular model. Because there was no omnibus regression coefficient associated with actual test administration condition, the coefficient associated with the largest change in the dependent variable (that is, change from a reference group) was used in the various equations to test for mediation. The test administration condition reference group in all occasions was the unproctored/alone condition (i.e., those individuals that took the test alone, in an unproctored environment). As such, the regression coefficients where test administration condition is an IV (for both the total effect and the appropriate components of the indirect effect) reference the condition that was significantly higher or lower than the unproctored/alone condition on the DV (i.e., references the coefficient from a single degree of freedom test).

Hypothesis 6 posited that perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) would partially mediate the relationship between actual administration conditions and initial applicant perceptions (procedural fairness and information privacy concerns). Main effects associated with the potential mediating pathways can be found in Table 10. The coefficients for those pathways where client type serves as a moderator can be found in Table 11.

Hypothesis 6 received partial support; that is, although there was no direct relationship between actual test administration condition and initial applicant perceptions, the indirect effects were significant. For example, actual test administration condition

was indirectly related to both information privacy concerns and fairness through a relationship with the perceived quality of the testing environment. As indicated by a regression coefficient of B = -.46, the greatest differences in the perceived quality of the testing environment were between the reference group (i.e., the unproctored/alone condition) and the unproctored/others condition, such that individuals in the unproctored/others condition perceived the testing environment to be of lesser quality than individuals in the unproctored/alone condition. Therefore, whether applicants were in an unproctored environment in the presence of others or alone in an unproctored environment affected their perceptions of the testing environment; this variation in the perceived quality of the testing environment had a positive and significant impact on perceptions of procedural fairness and a negative and significant impact on information privacy concerns, such that individuals in higher-quality testing environments perceived the testing procedure to be more fair, and reported less concern over the privacy of their test-related information.

Actual test administration condition was also indirectly related to privacy concerns through a relationship with perceived job-relatedness of the test. Here, the greatest difference in perceived job-relatedness was between the reference group (i.e., the unproctored/alone condition) and the proctored/alone condition. As such, whether or not applicants took the test alone in a proctored or unproctored environment affected their perceptions of job-relatedness (with individuals alone in a proctored environment perceiving the test to be the most job-related); this, in turn, had a negative impact on information privacy concerns, such that the more the test was perceived to be related to

the job, the less the individual was concerned with the collection and potential dissemination of his/her test data.

In further support of Hypothesis 6, there were three additional significant mediational pathways that were qualified by client type. First, for the relationship between test administration condition (IV), job-relatedness (MV), and fairness (DV), client type moderated the job-relatedness to fairness relationship, $F(1, 5007) = 21.92$, $p = .00$, such that the relationship was stronger for leader-level clients than it was for entry-level clients. As a result, the indirect effect for leader-level clients was stronger than that of entry-level clients, although not significantly so. The mediational pathway for both client types was through the proctored/alone condition; that is, whether or not applicants took the test alone in a either proctored or unproctored environment affected their perceptions of job-relatedness (with individuals alone in a proctored environment perceiving the test to be the most job-related), which in turn had a positive impact on perceptions of procedural fairness.

The relationships between test administration condition (IV), user-friendliness (MV), and both fairness and information privacy concerns (DV) were also qualified by client type; specifically, client type moderated the user-friendliness to fairness relationship $F(3, 4967.21) = 24.29$, $p = .00$, and the user-friendliness to information privacy concerns relationship, $F(1, 4928.4) = 21.92$, $p = .00$, such that both relationships were significantly stronger for entry-level clients than they were for leader-level clients. As a result, the indirect effects for entry-level clients were also stronger than the indirect effects for leader-level clients, although not significantly so. The mediational pathways

between test administration conditions, user-friendliness, and both fairness and information privacy concerns for entry and leader-level client types were through the unproctored/others test administration condition; that is, whether or not applicants took the test alone in an unproctored environment or with others in an unproctored environment affected their perceptions of user-friendliness such that individuals taking the test with others in an unproctored environment perceived the IBT experience to be less user-friendly than those taking it alone in an unproctored environment. This variability in perceptions of user-friendliness, in turn, had a positive impact on perceptions of procedural fairness, and a negative impact on information privacy concerns. Thus, we can say that taking the test in an unproctored/alone versus an unproctored other condition indirectly affects information privacy concerns and fairness through a relationship with user-friendliness.

Hypothesis 7 posited that perceived procedure characteristics (perceptions of the testing environment, perceptions of user-friendliness/efficiency, and perceptions of job-relatedness) would partially mediate the relationship between actual administration conditions and scores on the test composites. This hypothesis was supported for a variety of the potential pathways. Again, main effects associated with the mediating pathways can be found in Table 12. The coefficients for those pathways where client type serves as a moderator can be found in Table 13.

First, results indicate that actual test administration condition was related to scores on each of the three test composites through a relationship with perceived job-relatedness of the test. Here, the greatest difference in perceived job-relatedness was between the

reference group and the proctored/alone condition. As such, whether or not applicants took the test alone in a proctored environment or alone in an unproctored environment affected their perceptions of job-relatedness (with individuals alone in a proctored environment perceiving the test to be the most job-related); this, in turn, had a negative impact on Situational test scores and a positive impact on Personality Fit and Background Experience test scores, such that the more the test was perceived to be related to the job, the lower individuals scored on the Situational test composite and the higher individuals scored on the Personality Fit and Background Experience composites. Thus, we can say that taking the test in a proctored/alone versus an unproctored/alone environment indirectly affects test scores (on all three composites) through a relationship with the perceived job-relatedness of the test.

Actual test administration condition was also related to scores on the Personality Fit composite through a relationship with perceived user-friendliness/efficiency. Here, the greatest difference in perceived user-friendliness/efficiency was between the reference group (i.e., the unproctored/alone condition) and the unproctored.others condition. As such, whether or not applicants took the test in either of these two environments affected their perceptions of user-friendliness/efficiency (with individuals alone in an unproctored environment indicating higher perceptions of user-friendliness/efficiency); this variability in user-friendliness/efficiency, in turn was positively related to Personality Fit test scores, such that the more user-friendly/efficient the process, the higher the test scores on the Personality Fit composite. Again we see actual test-taking environments affecting test scores through a relationship with perceived

procedure characteristics; specifically, we can say that taking the test in an unproctored/alone versus an unproctored/others environment indirectly affects Personality Fit test scores through a relationship with the perceived user-friendliness/efficiency of the IBT process.

In further support of Hypothesis 7, there were two significant mediational pathways that were qualified by client type. First, for the relationship between test administration condition (IV), user-friendliness/efficiency (MV), and scores on the Background Experience composite (DV), client type moderated the user-friendliness to test score relationship, $F(1,5011.8) = 5.26$, $p = .02$, such that it was significant for clients hiring entry-level applicants, but not for clients hiring leader-level applicants. As a result, the indirect effect for entry-level clients was significant, while the indirect effect for leader-level clients was not. The difference in the independent regression coefficients of the indirect effects was also significant; thus this instance of mediation was significantly moderated by client type ($Z = 2.10$). The significant mediational pathway for entry-level clients was through the unproctored/others condition; that is, whether or not applicants to entry-level clients took the test alone in an unproctored environment or with others in an unproctored environment influenced their scores on the Background Experience composite through a relationship with perceptions of user-friendliness/efficiency. This mediating effect accounted for 21.5% of the total effect of the relationship between test administration conditions and scores on the Background Experience test composite. That is to say, for entry-level clients, being in an unproctored/others condition was associated with lower perceptions of user-

friendliness/efficiency of the process (versus being in an unproctored/alone condition); this variability in user-friendliness was associated with scores on the Background Experience test composite, such that the more user-friendly the IBT experience, the higher the test scores.

As well, for the relationship between test administration condition (IV), perceptions of the testing environment (MV), and scores on the Personality Fit composite (DV), client type moderated the testing environment to test score relationship, $F(1, 5000) = 7.14$, $p = .01$, such that it was significant for clients hiring leader-level applicants, but not for clients hiring entry-level applicants. As a result, the indirect effect for leader-level clients was significant, while the indirect effect for entry-level clients was not. The difference in the independent regression coefficients of the indirect effects was also significant; thus this instance of mediation was significantly moderated by client type ($Z = 2.19$). The significant mediational pathway for leader-level clients was through the unproctored/others condition; that is, whether or not applicants to leader-level clients took the test alone in an unproctored environment or with others in an unproctored environment influenced their scores on the Personality Fit composite through a relationship with perceptions the testing environment. This mediating effect accounted for 34.0% of the total effect of test administration conditions on Personality Fit composite scores. In other words, for leader-level clients, being in an unproctored/others condition was associated with lower perceptions of the quality of the testing environment (versus being in an unproctored/alone condition); this variability in perceptions of the testing

environment was associated with scores on the Personality Fit test composite such that the better testing environment, the higher the test scores.

Hypothesis 9a

Hypothesis 9a proposed a dual mediational pathway. Specifically, this hypothesis posited that applicant perceptions of the IBT procedure characteristics would vary by actual test taking location. This variation would in turn influence applicants' initial perceptions of information privacy concerns and fairness, which would ultimately affect scores on each of the three test composites. The hypothesis was tested using the same logic as the Baron and Kenny (1986) approach. With dual mediation, however, an additional path coefficient was created by regressing the outcome variable (i.e., test scores) on a set of independent variables containing the IV and both of the MVs. This partial coefficient was multiplied by the effect of the IV predicting the first mediating variable, and the partial coefficient of the first mediating variable predicting the second mediating variable. The multivariate delta standard error (Taylor, MacKinnon, & Tein, 2007) of this dual mediational effect was calculated and then used to test the significance of the mediating pathway according to the Sobel test (Sobel, 1982). To test whether or not the dual mediational effects were qualified by client type, the differences in coefficients were tested for significance using the formula from Cohen et al. (2003). Lastly, as with the other tests of mediation where the independent variable was actual test-taking location, each of the mediational pathways described are associated with one (of the four) test administration conditions (i.e., all values are based on a one degree of freedom test).

The main effects for the components of Hypothesis 9a can be found in Table 14. Although, as part of the analysis, there were individual effects that were qualified by client type, the overall mediating effect was not; therefore, for a parsimonious presentation of results, only the main effects (for each component of each pathway) are presented.

As indicated by the results in Table 14, Hypothesis 9a received partial support. For example, job-relatedness and information privacy concerns both mediated the relationship between actual test taking condition and scores on the Personality Fit and Background Experience test composites. Here, the greatest difference in perceived job-relatedness was between the reference group and the proctored/alone condition. As such, whether or not applicants took the test alone in a proctored environment or alone in an unproctored environment affected their perceptions of job-relatedness (with individuals alone in a proctored environment perceiving the test to be the most job-related); this relationship, in turn, had a negative impact on information privacy concerns such that the more the test was perceived to be related to the job, the less concerned applicants were about the privacy of their test-related information. The resulting unique variability in information privacy concerns was then negatively related to scores on both the Personality Fit and Background Experience test composites, even when controlling for actual test-taking location and job-relatedness; that is, regardless of actual test-taking location and how job-related the test was perceived to be, the more concerned applicants were over the privacy of their test related information, the lower the scores on these two test composites. Overall, we can thus say that taking the test in a proctored/alone versus

an unproctored/alone environment indirectly affects Personality Fit and Background Experience test scores first through a relationship with the perceived job-relatedness of the test, and then through a relationship with information privacy concerns as well. This mediating effect was not significant for Situational test scores as a dependent variable.

There were also significant multi-mediational pathways between actual test-taking location (IV), user-friendliness/efficiency (as the first MV), information privacy concerns (as the second MV), and scores on both the Personality Fit and Background Experience test composites (DVs). In this instance, the greatest difference in user-friendliness/efficiency was between the reference group and the unproctored/others condition. As such, whether or not applicants took the test alone in an unproctored environment or in an unproctored environment with others had an effect on their perceptions of the user-friendliness/efficiency of the testing process (with individuals alone in an unproctored environment perceiving the testing process to be more user-friendly/efficient); this relationship, in turn, had a negative impact on information privacy concerns such that the more user-friendly/efficient the testing process was perceived to be, the less concerned applicants were about the privacy of their test-related information. The resulting unique variability in information privacy concerns negatively impacted scores on both the Personality Fit and Background Experience test composites, even when controlling for actual test-taking location and user-friendliness/efficiency; that is, regardless of the actual test-taking location and perceived user-friendliness/efficiency of the testing platform, the more concerned applicants were over the privacy of their test related information, the lower their scores were on the Personality Fit and Background

Experience test composites. Overall, we can say that taking the test in an unproctored environment alone versus in an unproctored environment with others indirectly affects Personality Fit and Background Experience test scores through a relationship with the perceived user-friendliness/efficiency of the testing process, and then information privacy concerns as well. Again, this dual-mediational relationship was not significant when Situational composite scores were the DV of interest.

The last significant dual-mediational pathways were between actual test-taking location (IV), quality of the testing environment (as the first MV), information privacy concerns (as the second MV), and scores on both the Personality Fit and Background Experience test composites (DVs). Here, the greatest difference in the perceived quality of the testing environment was between the reference group and the unproctored/others condition. As such, whether or not applicants took the test alone in an unproctored environment or in an unproctored environment with others had an effect on the perceived quality of the testing environment (with individuals alone in an unproctored environment reporting a better quality testing environment); this relationship, in turn, had a negative impact on information privacy concerns such that better quality testing environments were associated with lower levels of concern over privacy of test-related information. The resulting unique variability in information privacy concerns was negatively related to scores on both the Personality Fit and Background Experience test composites, even when controlling for actual test-taking location and perceptions of the testing environment; that is, regardless of actual test-taking location and perceived quality of the testing environment, the more concerned applicants were over the privacy of their test

related information, the lower their scores were on the Personality Fit and Background Experience test composites. When looking at the entire pathway as whole, we can say that taking the test in an unproctored environment alone versus in an unproctored environment with others indirectly affects Personality Fit and Background Experience test scores (but *not* Situational test scores) first through a relationship with the perceived quality of the test-taking environment, and then through a relationship with information privacy concerns as well.

In summary, the unique relationship between perceived procedure characteristics (perceived job-relatedness, user-friendliness/efficiency, and quality of the testing environment) and information privacy concerns was found to mediate a relationship between actual test-taking locations and scores on Personality Fit and Background Experience composites, but *not* scores on Situational composites. This finding of dual-mediation highlights the unique contribution of each category of variables (i.e., perceived procedure characteristics and initial applicant perceptions) when examining test score differences that occur between various actual test administration conditions. Lastly, results indicated that all pathways with fairness as an initial applicant perceptions variable of interest (versus information privacy concerns), were non-significant.

Hypothesis 9b

Hypothesis 9b proposed a multi-mediational pathway between actual test-taking location, perceived procedure characteristics, initial applicant perceptions, and recommendation intentions. This hypothesis was not tested.

CHAPTER FOUR

DISCUSSION

Overall, results of the study support the application of existing reactions frameworks (e.g., Hausknecht et al., 2004; Ryan & Ployhart, 2000) to an Internet-based testing context. Results show that situational characteristics (i.e., actual test administration conditions) directly influence perceptions of the test and of the testing process, and indirectly influence initial applicant perceptions such as fairness and information privacy concerns. Each set of perceptions, in turn, either directly or indirectly affects an important selection-related outcome; scores on a pre-employment test.

The following section will address four themes from the study's results, identified for their potential contribution to the literature: 1) the new conceptualization of test administration conditions and outcomes that differ between these conditions, 2) the importance of information privacy concerns as a reactions variable of interest, 3) the differences in antecedents and consequences of applicant perceptions between client types, and 4) the non-significant results of race as a moderator. This will be followed by a discussion of the study's limitations, practical implications of the results, and recommendations for future research.

Themes

Theme 1: Test Administration Conditions and Associated Outcomes

One of the initial contributions of this study is the new, four-category actual test administration system. The four categories -- unproctored/alone (taking the test alone, in

an unproctored environment), unproctored/others (taking the test with others, in an unproctored environment), proctored/alone (taking the test alone, in a proctored environment), and proctored/others (taking the test with others, in a proctored environment) – were derived empirically, based on differences in perceptions of the test and the testing process that existed between location types. This new scheme can be applied across a variety of test-taking opportunities, and is a meaningful way of differentiating between types of proctored conditions as well as between types of unproctored conditions (as has been a focus in the past).

When examining the relationship between the new test administration condition categories and perceived procedure characteristics, results both support and extend the current research base; distinguishing between presence/absence of others both within proctored conditions and between proctored and unproctored conditions may help to decipher some of the ambiguity that currently exists in the research regarding which conditions are "best" for applicants. For example, results of the study support prior research findings that applicants in proctored conditions find the test to be the most job-related (e.g., Wasko et al., 2007). Main effects showed that the presence/absence of a proctor was the main component affecting perceived job-relatedness, and that applicants taking a test alone in a proctored environment viewed the test as significantly more job-related than individuals in taking the test alone in an unproctored environment. When examining the perceived procedure characteristics of user-friendliness/efficiency and quality of the testing environment, it was the presence/absence of others that had the most profound effect. Here, individuals taking the test alone in an unproctored environment

(e.g., taking the test at home) rated the process as more user-friendly/efficient and perceived the testing environment to be of higher quality than individuals taking the test in an unproctored environment with others (e.g., testing center, computer center or meeting room). This, again, is in line with previous research findings where unproctored home conditions have been viewed as the most user-friendly and suitable for testing (e.g., Sinar & Reynolds, 2004).

The current study also extends beyond differences in perceived procedure characteristics, and examines how the test administration conditions of applicants affect other outcomes, such as selection procedure fairness, concern over the potential privacy of test-related information, and test scores. First, results show that perceptions of fairness and information privacy concerns vary between test administration conditions. For individuals in the proctored/alone (vs. unproctored/alone) condition, differences in fairness and privacy perceptions were at least partly due to the perceived job-relatedness of the test, while for individuals in the unproctored/others condition, these differences were at least partly due to perceptions of user-friendliness/efficiency and the quality of the testing environment, but not due to the job-relatedness of the test. These results seem to suggest that different components of the IBT procedure are more/less influential to applicants, depending on where they are invited/allowed to take the test.

The potential for differences in test scores between test administration conditions was also examined, and results indicate that individuals in fact may be at an advantage/disadvantage, depending on where they take the test. For example, individuals taking the test alone in proctored environments may score higher on Background

Experience and Personality Fit test composites than individuals in unproctored/alone conditions. This test administration condition to test score relationship is at least partially attributed to a mediational pathway where individuals in the proctored/alone environment perceive the test to be more job-related, which in turn leads to less concern over the privacy of test-related information. Lower levels of information privacy concern are then associated with higher scores on the Personality Fit and Background Experience composites. These test scores may reflect true differences in the quality of applicants; that is, clients who are willing and able to invite applicants in to a proctored testing environment may bring in more qualified individuals, or individuals that may take the testing process more seriously. Alternatively, the "real" sense of proctored/alone testing conditions may influence individuals so they are more likely to try their best on the test, or potentially even alter their response patterns to seem like "better" applicants. Individuals in proctored/alone conditions also tended to score lower on the Situational test composite than individuals in the unproctored/alone condition, due in part to the perceived job-relatedness of the test. Here, it seems like lower scores on this cognitive-type component might be related to a form of test-anxiety or nervousness that is influenced by the perceived job-relatedness of the test.

Individuals who take the test with others in unproctored environments may also be at a disadvantage when compared to individuals that take the test alone in unproctored environments. Here, we're seeing that the administration condition to test score relationship is partially attributed to a mediational pathway where individuals in the unproctored/others environment perceive the testing process to be less user-

friendly/efficient and the testing environment to be of lesser quality than individuals that are taking the test in unproctored/alone conditions. These negative perceptions are leading to greater concern over the privacy of test-related information, which is associated with lower scores on the Personality Fit and Background Experience composites. Here, for different unproctored testing conditions, perceptions of the process and of the environment account for variance in test scores.

Theme 2: Importance of Information Privacy Concerns in IBT

The second theme that surfaced is the importance of information privacy concerns in an Internet-based testing context. Results of the current study show that information privacy concerns are an important and relevant construct for IBT, perhaps even more so than selection procedure fairness, one of the most frequently studied perceptions variables. Evaluation of information privacy concerns addresses Ryan and Ployhart's (2000) call to "consider perceptions other than just fairness as possible influences on behavior" so the field can "fully understand how an applicant reacts to a selection process," (pg. 585) as well as the call from previous researchers for the identification of additional antecedents and consequences of information privacy concerns (e.g., Smith et al., 1996).

To date, empirical investigations of applicants' levels of information privacy concerns in Internet-based selection settings have been somewhat scarce. In the general literature, examples of previously identified antecedents of information privacy concerns include computer anxiety, personality traits such as trust/distrust, paranoia, and social criticism, and previous personal experiences with information privacy invasion (Smith et

al., 1996; Stewart & Segars, 2002). Results from the current study are a bit more situation-specific, and suggest that in IBT situations, the perceived quality of the testing environment, perceived user-friendliness/efficiency of the testing process, and the perceived job-relatedness of the test all have a negative impact on information privacy concerns such that the more ideal the testing environment, the less concerned applicants are about the collection and potential misuse of their test-related information (i.e., the more they agree the information is going to be seen by appropriate individuals and used for intended purposes).

Previous studies have also examined information privacy concerns as technology-related antecedent of perceptions like test-taking motivation, and of organization-related attitudes such as intentions toward the organization (Bauer, et al., 2006). The current study extends this existing literature base by examining information privacy concerns as a potential predictor of a behavioral outcome: test performance. When examining information privacy concerns as a predictor, we see its value in an IBT context, over and above that of selection procedure fairness. For example, in situations where both variables were simultaneously expected to predict test scores, we see information privacy concerns (and not selection procedure fairness) emerge as a significant predictor. Less concern over the privacy of test-related information was related to higher scores on the Personality Fit and Background Experience test composites, and to lower scores on the Situational composite. Again, less concern over the misuse of information is related to higher scores on self-report type-items, which may be an artifact of applicants either trying their best, or trying to look their best, and to lower scores on a test composite that

requires a greater amount of cognitive processing, perhaps an artifact of nervousness or anxiety. This particular finding supports the Harris' (2006) proposition that privacy may differentially affect the way applicants answer multiple types of test questions, and may be one of the first studies to do so.

When considering additional components of the test-taking experience, information privacy concerns again emerge as a significant contributor. For example, information privacy concerns partially mediate the relationship between perceived procedure characteristics and test scores, such that the better the testing experience, the less concern over the privacy of information, the higher the scores on Personality Fit and Background Experience composites and the lower the scores on the Situational composite. The indirect effect through information privacy concerns accounts for between 7% and 30% of the total effect of perceived procedure characteristics on test scores, indicating that it may be important for organizations not only to consider standardizing the testing environments of applicants, but to consider the possibility of mitigating applicants' information privacy concerns as well. This will help to ensure consistency in applicants' test-taking experiences, and may help the organization maintain the utility and validity of the selection tool.

Results also showed that information privacy concerns differed between test administration conditions, through relationships with perceived procedure characteristics. This shows that information privacy concerns are in part related to the actual test-taking environment of applicants, and are influenced by both technology related components of that environment/experience (e.g., user-friendliness/efficiency) and non-technology

specific components (e.g., perceived quality of the testing environment). This is an important consideration, again, because information privacy concerns have not only been associated with test scores, per the current study, but to additional selection related outcomes as well, including reluctance to submit employment related information online (Smith et al., 1996), test-taking motivation, and perceptions of the hiring organization (Bauer et al., 2006). These outcomes may affect the type and quality of individuals that apply to the organization, that remain in the selection process of the organization, and that are ultimately hired by the organization, and may also affect the organizational reputation in the applicant population.

When examined as part of the "bigger picture," or the entire proposed model of applicant perceptions to Internet-based testing, the importance of information privacy concerns again emerges, not only in terms of its direct and unique influence on test scores, but as a distinctive component in the entire online test-taking experience. Specifically, when comparing the experience of applicants taking the test alone in a proctored environment to those alone in an unproctored environment, we see significant differences in perceived job-relatedness of the test, which subsequently affects concerns over the privacy of test-related information; the differences in information privacy concerns in turn influence scores on the Personality Fit and Background Experience test composites. The same dual-mediational pathway occurs between individuals taking the test alone in an unproctored environment and individuals taking the test with others in an unproctored environment. That is, there are differences in the perceived quality of the test-taking environment and in the perceived user-friendliness/efficiency of the testing

process; these differences affect information privacy concerns, which then affect scores on the Personality Fit and Background Experience composites. In summary, information privacy concerns are an integral part of the entire test-taking experience, and are also important in that they influence test scores even when additional components of the testing experience (i.e., the actual test-administration condition, perceived procedure characteristics, and fairness) are held constant.

Theme 3: Differences between client types

Another consistent element across results of the study was the significant difference in relationships between clients hiring for entry-level positions, and clients hiring for leader-level positions. For clients hiring for entry-level positions, the perception of user-friendliness/efficiency was a particularly important component of the IBT process. For example, the perception of user-friendliness/efficiency was a significantly stronger predictor of both information privacy concerns and fairness for clients hiring entry-level positions than it was for clients hiring leader-level positions. Additionally, in some cases, perceived user-friendliness/efficiency had an effect on applicants' test scores in clients hiring for entry-level positions, but not in clients hiring for leader-level positions; specifically, in clients hiring for entry-level positions there was a direct positive effect on Background Experience test scores, and an indirect effect on all three test composites through a relationship with information privacy concerns. There were no such relationships for clients hiring for leader-level positions.

These results may be due to a variety of factors. For example, individuals applying to entry-level clients were younger than those applying to leader-level clients.

Younger applicants who are more technologically savvy may have higher expectations around the quality of computers, and may therefore be more adversely affected by computers/computer interactions that do not meet their high standards. Public press articles around Generation Y suggest that younger individuals may be more accustomed to top of the line technology, and may therefore be more impatient when it comes to issues regarding the user-friendliness/efficiency of the testing platform than their older, less technologically savvy counterparts might be. As well, entry-level clients that bring individuals onsite (e.g., onsite at the hiring organization, into a test center) may not invest as much money into the quality of computers as clients hiring for leader-level positions might. Therefore, in those instances that an individual applying to an organization hiring for entry-level positions takes a test on a company owned computer (e.g., at a kiosk), he/she may be at a disadvantage when compared to applicants that take the test at a different location. In order to avoid such situations, clients hiring for entry-level positions should pay special attention to the components of the test-taking experience that might affect perceptions of user-friendliness/efficiency, such as the type of Internet connection, type of computer, etc., and should aim for consistency in these components across the various test-taking opportunities afforded to applicants.

Another notable client type difference was the importance of job-relatedness to clients hiring for leader-level positions; specifically, that the relationship between job-relatedness and perceptions of selection fairness was significantly stronger in leader-level clients than it was in entry-level clients. Job-relatedness might be a more important factor for clients hiring for leader-level positions because these positions are typically of

higher stakes than entry-level positions. For leader-level applicants, moving on in the selection process is likely more of a move towards the attainment of a career goal than just simply the attainment of a job; this may involve more of a personal and professional investment. For this reason, both the evaluation of the fairness of the procedure and the conceptual link from test content to the potential performance requisites of the job may be more salient at the leader-level position.

The client type difference of job-relatedness was not as substantial as that of user-friendliness/efficiency, but is important nonetheless. Taken together, it seems as if the technological components of the IBT experience (i.e., perceptions of user-friendliness/efficiency, information privacy concerns) are more important for clients hiring for entry-level positions than clients hiring for leader-level positions. It also seems as if equity and the relevance of the selection procedure are more important for clients hiring for leader-level positions than clients hiring for entry-level positions. In leader-level positions, it is more likely that the online test will be an initial component of a longer, more involved selection process, and of a more complicated decision-making process. In the application process, leader-level applicants may have to make more well-calculated decisions, into which the quality and content of the selection process are incorporated. Therefore, these components may be more important to leader-level applicants. Entry-level applicants, on the other hand, may be more influenced by more "superficial" characteristics of the selection procedure.

Theme 4: Race as a Potential Moderator

In order to examine the possibility of demographic group differences in the quality of the Internet-based testing experience, and in the impact that the experience might have on test performance, race was examined as a potential moderator in the actual test administration to perceived procedure characteristics relationship, and in the relationship between applicant perceptions (both perceived procedure characteristics and initial applicant perceptions) and test performance. Results indicated that, across client organizations, race did not moderate either of the proposed relationships. First, there were no differences in the perceived quality of the test administration conditions between applicants of different races/ethnicities. Additionally, the relationship between perceptions of the testing process and test performance did not differ based on race/ethnicity. These results suggest that, across client organizations, the Internet-based testing experience may not significantly differ by race.

It is important to remember, however, that results from the current study are across multiple client organizations, and that there are a variety of client specific factors that may have a significant impact on the potential for group differences. For example, an organization's recruitment practices, diversity goals, and the make-up of the applicant population will all affect the quality of available applicants, as well as the quality of the individuals actually applying to an organization. Additionally, although results suggest there may not be differences in *perceptions* of the test administration conditions, it is important to remember that the actual resources available to applicants and/or provided to applicants by the client organization (in terms of internet connection speed, types of

computers used, etc.) may differ based on demographic group membership. As such, the possibility of race differences should not be dismissed, and should potentially be monitored by clients using IBT.

Limitations

Before discussing implications for researchers and practitioners, potential limitations of the study should be discussed. One noted limitation is the measurement tool used to assess the perceived procedure characteristics and initial applicant perceptions. As this was one of the first studies to examine information privacy concerns in an IBT context, the items used to assess information privacy concerns are of most concern. As previously mentioned, data were gathered in actual employment settings, and thus a simple, short item set was necessary. As such, concern over the privacy of information was assessed via 3 items, with one item addressing three of the four information privacy concern factors originally identified and empirically distinguished by Smith et al. (1996). During analysis, the three items were combined into one overarching factor. Although a preferred alternative would have been to use a pre-established information privacy concern scale (e.g., that developed and validated by Smith et al.), empirical evidence supports the viability of the 3 item set used here. For example, results from previous studies (e.g., Stewart & Segars, 2002) maintain the existence of a second-order information privacy concern factor and therefore provide support for the nature of the information privacy concern construct as it was operationalized in the course of this study. Furthermore, results of the PCA, in conjunction with the reported internal consistency reliability estimate of .72, suggest that all three items were in fact measuring

the same or similar construct, although the exact nature of that construct cannot be determined. What is known, however, is that the construct is important in an IBT context, and is empirically distinct from fairness, as has been documented in other studies (e.g., Eddy et al., 1999).

Another limitation of the current study involves the proposed directionality of one of the model's causal arrows; specifically, that between initial applicant perceptions and test performance. Because of various characteristics of the study's proposed model and characteristics of the available data from which the model was tested, the relationships between variables are purely correlational in nature and cannot be discussed/interpreted in terms of causal inferences or directionality. Therefore, it may be that scores on the test predict the various applicant perceptions, and not that initial perceptions influence subsequent test scores (as outlined in the model). This alternative has been tested in previous research (e.g., Chan et al., 1998), and empirical findings do support the notion that post-test reactions (i.e., reactions assessed after completion of a test) are at least partly a function of individuals' test performance. This finding has previously been attributed to a self-serving bias, such that doing well on a cognitive ability test (where one can, with relative accuracy, estimate actual test performance) leads to positive post-test reactions. This relationship has not been replicated, however, between performance on a personality test (where actual performance is not easy to discern) and post-test reactions (Chan et al., 1998). Although the issue of directionality is a legitimate concern in the current study, the negative relationship between job-relatedness and Situational test scores make this possibility a bit less likely; for example, doing well on the Situational

(i.e., cognitive ability) composite wouldn't likely result in negative perceptions of the test/test content. Additionally, the non-cognitive nature of the test items for the Personality Fit and Background Experience composite make it difficult for applicants to judge how well (or poorly) they did on the test. This inability to make firm evaluations of test performance for a majority of the test items may also decrease the likelihood that perceived performance on the test would predict perceptions of fairness and/or information privacy concerns. Ultimately, however, because of the cross-sectional nature of data collection, this alternative (i.e., a directional arrow from test performance to initial applicant perceptions) cannot definitively be ruled out.

One last potential limitation worth noting is that only 86.4% of individuals who completed the test also completed the feedback questionnaire. Therefore, approximately 14% of the potential sample was not included in the analysis of applicant perceptions of IBT. Based on existing findings (e.g., Singer, Mathiowetz, & Couper, 1993) it is likely that this 14% was comprised of individuals that were more concerned over the privacy of their test-related information than those that did complete the feedback questionnaire. Not including these individuals in the analysis sample likely contributed to the positive skew of the information privacy concerns variable; that is, their inclusion would likely have increased variability in information privacy concerns. This potential limitation, therefore, may actually be considered a strength in that hypotheses were actually tested on a more conservative estimate of information privacy concerns: increasing the variability in the estimate would also increase the likelihood of finding significant results.

Practical Implications

Taken together, results of this study have important implications for applicants, hiring organizations, and consulting firms/test publishers. Specifically, they are useful to client organizations considering the use of (or that are already using) Internet-based testing as part of a selection procedure, and they can also be used by consulting firms to help make best practice recommendations to clients. Typically, clients will not utilize all four of the test administration condition options; information from the study can help an organization choose which administration options best suits its testing needs, and/or help the organization provide applicants with information necessary for a successful testing experience.

For organizations considering the use of Internet-based testing, a major concern is typically the potential for cheating. Allowing individuals to take the test in unsupervised, unproctored locations (typically offsite) increases the likelihood that cheating may occur; individuals other than the actual applicant may be completing the test, or applicants may be using outside resources to complete test items. To the extent that cheating increases test scores, individuals in unproctored conditions may be at an advantage over individuals in other types of administration conditions. The results of the current study do highlight the potential for test score differences between individuals that take the test in unproctored vs. proctored conditions (and specifically, in unproctored/alone vs. proctored/alone conditions). Results indicate that individuals in unproctored/alone conditions score higher on Situational test scores. These same individuals, however, also score *lower* on Personality Fit and Background Experience test scores. This pattern of

results (i.e., that those in unproctored conditions are both at an advantage and at a disadvantage) indicate that test score differences may be due to factors other than cheating. Specifically, results indicate that part of the test score differences can be at least partially attributed to other predictors, such as perceptions of job-relatedness, perceived user-friendliness/efficiency, perceived quality of the testing environment, and information privacy concerns. This information again highlights that although organizations should be cognizant about the potential for test score differences, cheating may not be the primary issue with IBT. Standardization of elements affecting applicant perceptions (such as the perceived quality of the testing environment) may decrease the likelihood that individuals in any one test administration condition may be at an advantage/disadvantage over others.

If an organization decides to bring candidates onsite for proctored testing, there are a few specific recommendations to make, based on the study's results. Results indicated that there were not significant differences in test scores or other outcomes between individuals taking the test in proctored environments with others versus unproctored environments with others. As such, if an organization is considering bringing in multiple individuals at a time (either onsite, or to another testing location), the main consideration shouldn't necessarily be the presence/absence of a proctor; when taking the test in a group, a proctor doesn't seem to bring the same sense of legitimacy that it does in a proctored/alone setting. In these particular situations, a main consideration should be user-friendliness/efficiency of the testing procedure, and the quality of the testing environment. These variables were found to influence perceptions

of fairness, information privacy concerns, and Personality Fit and Background Experience test scores in a variety of situations. As such, in a group proctored setting, the proctor should serve to minimize distractions and address technical issues, should they arise. In an unproctored group setting, strict instructions should be given regarding noise/disruptions, and applicants should be given an outlet to contact if technical difficulties are experienced. These suggestions may help to increase perceptions of user-friendliness/efficiency and of the testing environment, and may help to minimize test score differences and negative perceptions between conditions.

When making test-location recommendations, it is also important to highlight the impact that perceptions of job-relatedness may have on outcomes; specifically, these perceptions were related to higher levels of fairness, lower concern over the privacy of test-related information, lower scores on the Situational test composite and higher scores on the Personality Fit and Biodata test composites. As such, organizations using proctored testing conditions (and particularly proctored/alone testing conditions) should strive to create a structured and professional testing-experience; keeping the environment standardized and professional, but pleasant as well, so as to decrease stress and tension during the testing process. The training and consistency evaluation of proctors may be a key component in accomplishing this.

Lastly, results indicate that organizations hiring for entry-level positions and organizations hiring for leader-level positions may want to focus on different components of the IBT experience during selection. For clients hiring for entry-level positions, technological aspects of the IBT experience are of greater importance to applicants.

Therefore, quality of onsite computers should be maintained, user-friendliness of the platform should be investigated, etc. For clients hiring for leader-level positions, perceptions of job-relatedness were a greater concern. Organizations should maintain a set level of realism in the IBT experience, but should also (particularly in proctored/alone administrations) manage applicant expectations in hopes of decreasing stress/anxiety associated with those perceptions.

Overall, the results can be used by clients to provide recommendations as to the *types* of environments that applicants should target, without constraining individuals to exact locations (e.g., "you must take the test in a public library"). To the extent that these environments can be standardized across administration conditions, organizations can offer applicants a variety of test-taking options.

Directions for Future Research

The current study was one of the first to apply existing applicant reactions frameworks to an Internet-based testing context. Although it was based on models proposed as part of the larger base of applicant reactions literature (i.e., Hausknecht et al., 2004; Ryan & Ployhart, 2000), it may be, at its very essence, a very contextualized application of Gilliland's (1993) model of fairness; where situational characteristics (i.e., test administration conditions) influence procedural rules that are either satisfied or violated (i.e., perceived procedure characteristics) which influence fairness (in this case, information privacy concerns might be a component of fairness that's more applicable in an IBT setting), which influence behavioral outcomes (i.e., test performance). Results from the study suggested that the technological aspect of Internet-based testing uniquely

influences a variety of these relationships; for example, information privacy concerns seemed to be a more relevant and informative component of the model than fairness was. Therefore, it may be the case that, although the conceptual framework of existing models are applicable to Internet/computer based selection settings, the constructs of interest that are housed in those frameworks may need to change. Following the same general framework, future research should therefore expand and adapt the current model so that it would be more applicable to other selection procedures that incorporate the use of technology (e.g., simulations, interviews). For example, additional antecedents of information privacy concerns should be introduced, such as computer anxiety and familiarity using the Internet. Additional behavioral, cognitive, and affective consequences should also be examined, including recommendation intentions and organizational attraction.

Additionally, as the importance of information privacy concerns has been established (e.g., Bauer et al., 2006) and now supported with the results of this study, additional research on the construct would be a beneficial addition to the field. First, a more quality measurement tool should be developed and validated. The item set created and validated by Smith et al. (1996) in the consumer literature would be a good start, but should likely be adapted to better fit a selection context. A more formal construct validation effort would then be beneficial as well, of which an important component would be to further delineate the similarities and differences between information privacy concerns and fairness. Another interesting avenue for future research on information privacy concerns would be the potential distinction between trait and state information

privacy concerns. That is, are there specific types of information exchange that are more or less disconcerting for individuals (e.g., providing employment related information vs. providing consumer information during a transaction), or is the construct more adequately represented by a general tendency to distrust (or trust) the collection, dissemination and use of personal information?

From a practical perspective, the influence of the perceived procedure characteristics and initial applicant perceptions on selection test validity would be a pertinent area of research, particularly since perceptions were directly and indirectly related to differences in test scores. To the extent that the differences in test scores would not correspond to actual post-hire performance differences, the utility of the tool may be undermined.

Lastly, ways to undermine the effects of perceived procedure characteristics and initial applicant perceptions on test scores should be investigated. Because the influences and effects of information privacy concerns are relatively under-researched, not much is known how to mitigate or manipulate these perceptions.

Conclusion

The current study highlighted the importance of applicant perceptions in an Internet-based testing context, applying existing applicant reactions frameworks to an applicant's IBT experience. Results indicate the viability of the framework, and highlight the unique features that the technological component of IBT adds to the model. The study also empirically highlights the importance of information privacy concerns as a

construct of interest in Internet-based testing, by evaluating the effect that this construct, and other perceptions variables, have on test performance.

APPENDICES

Appendix A

Demographic Information:

1. Gender: male female

2. Birthdate: _____

3. Race

    a. Native Hawaiian or Other Pacific Islander
    b. American Indian or Alaskan Native
    c. Asian
    d. White
    e. Hispanic or Latino
    f. Two or more races
    g. African American

Appendix B

Sample Items:

Action Benchmarking Response Scale and Sample Items (Situational test composite)

1	2	3	4	5
Very Ineffective	Somewhat Ineffective	Neither Effective nor Ineffective	Somewhat Effective	Very Effective

Rate the effectiveness of each action in the following list for dealing with an angry customer who has come to you with a complaint.

1. Describing the reasons why you are not able to address the complaint at this time.
2. Seeking information to find out which company representative is to blame for the issue.
3. Letting the customer know that the complaint is not major enough to become upset about.

Extent of Agreement Response Scale and Sample Items (Personality Fit test composite)

Respond to the following questions by indicating your agreement with each statement using the scale below.

1	2	3	4	5
Strongly disagree	Disagree	Undecided	Agree	Strongly agree

1. I enjoy having theoretical discussions about work.
2. I wait to make major decisions until the last minute.
3. I rarely encounter job tasks that are difficult for me.

Background Information Sample Item (Background Experience test composite)

Select the response that most accurately represents your own prior experience.

1. When others have given you advice about different ways to do a task, you have most often:

   A. tried the other person's approach to see if it works for you.
   B. asked someone else to decide which of the approaches is more effective.
   C. informed the other person why his or her approach is less effective than yours.
   D. ignored the advice because you know that your way of doing things is correct.

Appendix C

Recommendation Intentions:

Would you recommend employment in this organization to others?

- o Yes
- o No

Appendix D

Perceived Procedure Characteristics:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Perceptions of the Process: User-friendliness/efficiency

1. The online process was a user-friendly way of completing the inventory.
2. I was satisfied with my Internet connection speed during this online process.
3. The assessment process and inventory instructions were clearly stated.

Perceptions of the Process: Testing Environment

1. Environmental conditions in my assessment location (for example, noise, lighting, adequate space) were good.
2. I was **not** disrupted by other people while completing this online process.

Perceptions of the Test: Procedural Justice Perceptions

1. This inventory measured skills and capabilities relevant to the job in question.
2. Doing well on this inventory probably means that a person can do the job well.
3. The inventory provided an opportunity for me to demonstrate my skills and abilities.

Appendix E

Applicant Perceptions:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Perceptions of Selection Fairness (i.e., Procedural Fairness)

1. The process was fair.

Information Privacy Concerns

1. The level of personal information that the organization is collecting about me is appropriate.
2. I am confident that my responses to this assessment will only be accessed by authorized individuals.
3. I am confident that the data collected by this online assessment will be used only for hiring purposes.

Appendix F

Actual Test Administration Condition Items:

Did you complete the online assessment in a **proctored**, or an **unproctored** assessment environment? [NOTE: a proctored environment refers to one in which there is an assessment administrator present].

- o Proctored
- o Unproctored

In order to access and take the inventory, did you have to log-on using a company provided username and password?

- o Yes
- o No

If you completed the online assessment **on-site** at the organization to which you are applying (for example, their store, plant, or office building), please select the option that best matches that location:

- o Computer center or meeting room
- o Office or cubicle
- o Kiosk
- o Other
- o I did not complete the inventory at an on-site location

If you completed the online assessment in an **external** location, (i.e., one that is NOT on-site at the organization to which you are applying) please select the option that best matches that location:

- o Testing center
- o My home
- o Someone else's home
- o School/university
- o From the offices of my current employer
- o Public library
- o Coffee shop/bookstore/cyber café
- o Other
- o I did not complete the inventory in an external location

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Table 1

Factor Loadings for Principle Components Analysis of Within-Client Standardized Perceived Procedure Characteristics and Initial Applicant Perceptions

Item	Unstandardized Factor Loading			
	Factor			
	User-friendliness	Privacy Concerns	Job-relatedness	Testing Environment
User-friendliness1	**0.83**	-0.16	-0.09	0.14
User-friendliness2	**0.81**	0.07	0.04	-0.08
User-friendliness3	**0.73**	0.12	-0.04	0.04
Privacy Concerns1	-0.19	**0.98**	-0.04	0.05
Privacy Concerns2	0.15	**0.80**	-0.04	-0.01
Privacy Concerns3	0.16	**0.60**	0.11	-0.02
Job-relatedness1	-0.12	-0.01	**0.88**	0.05
Job-relatedness2	-0.07	-0.01	**0.87**	0.04
Job-relatedness3	0.35	0.02	**0.55**	-0.11
Testing Environment1	-0.04	0.04	0.02	**0.90**
Testing Environment2	0.15	0.00	0.03	**0.78**

Table 2
ICCs for Dependent Variables

Variable	*ICC*
Job-relatedness	0.08
User-friendliness /efficiency	0.02
Testing environment	0.05
Information privacy concerns	0.07
Fairness	0.06
Situational test score	0.19
Personality Fit test score	0.49
Background Experience test score	0.93

Table 3
Means, Standard Deviations, and Internal Consistency Reliability Estimates of Continuous Variables

	Variable	*N*	*M*	*SD*	*α*
1	Job-relatedness	5642	4.00	0.73	0.72
2	User-friendliness /efficiency	5675	4.53	0.53	0.72
3	Testing environment	5674	4.28	0.83	0.72
4	Information privacy concerns	5675	1.57	0.57	0.78
5	Fairness	5653	4.44	0.68	
6	Situational test score	5675	0.54	0.61	
7	Personality Fit test score	5675	9.75	0.86	
8	Background Experience test score	5675	9.63	1.94	

Table 4
Main Effects for Perceived Procedure Characteristics and Initial Applicant Perceptions Predicting Test Composite Scores

IV-->DV	*B*	*SE*	*df*	*t*
Situational Test Scores				
Job-relatedness-->Situational test score	-0.05	0.01	5074.16	-3.94*
User-friendliness-->Situational test score	0.04	0.02	5074.49	2.08*
Testing environment-->Situational test score	-0.01	0.01	5084.03	-0.54
Fairness-->Situational test score	-0.01	0.02	5078.72	-0.36
Privacy concerns-->Situational test score	0.05	0.02	5076.76	2.29*
Personality Fit Test Scores				
Job-relatedness-->Personality test score	0.14	0.02	5080.04	9.51*
User-friendliness-->Personality test score	0.23	0.02	5082.58	9.73*
Testing environment-->Personality test score	-	-	-	-
Fairness-->Personality test score	0.02	0.02	5084.22	0.82
Privacy concerns-->Personality test score	-0.28	0.02	5082.71	-12.36*
Background Experience (BE) Test Scores				
Job-relatedness-->BE test score	0.08	0.02	5076.99	4.86*
User-friendliness-->BE test score	-	-	-	-
Testing environment-->BE test score	-	-	-	-
Fairness-->BE test score	-0.02	0.02	5082.48	-1.07
Privacy concerns-->BE test score	-0.10	0.02	5080.59	-3.98*

Note. Cells with a dash ('-') indicate relationships that were moderated by client type. See Table 4 for appropriate simple effects.

* $p<.05$.

Table 5
Simple Effects for Perceived Procedure Characteristics and Initial Applicant Perceptions Predicting Test Composite Scores: Client Type Moderation

IV-->DV	*B*	*SE*	*df*	*t*
CLIENT TYPE = Leader Level				
Testing environment-->Personality test score	0.07	0.03	930.16	2.46*
User-friendliness-->BE test score	-0.01	0.06	930.77	-0.14
Testing environment-->BE test score	0.04	0.03	930.11	1.35
CLIENT TYPE = Entry Level				
Testing environment-->Personality test score	0.00	0.01	4147.96	0.14
User-friendliness-->BE test score	0.11	0.03	4143.25	3.90*
Testing environment-->BE test score	-0.03	0.02	4147.77	-1.87

Note. BE represents the Background Experience test score composite.
* $p<.05$.

Table 6
Main Effects for Perceived Procedure Characteristics Predicting Initial Applicant Perceptions

IV-->DV	*B*	*SE*	*df*	*t*
Testing environment-->Fairness	0.05	0.01	5078.11	4.46*
Job-relatedness-->Privacy concerns	-0.22	0.01	5081.18	-23.73*
Testing environment-->Privacy concerns	-0.04	0.01	5044.89	-4.20*

* $p<.05$.

Table 7
Simple Effects for Perceived Procedure Characteristics Predicting Initial Applicant Perceptions: Client Type Moderation

IV-->DV	*B*	*SE*	*df*	*t*
CLIENT TYPE = Leader Level				
Job-relatedness-->Fairness	0.36	0.03	932.71	12.61*
User-friendliness-->Fairness	0.37	0.04	930.59	8.91*
User-friendliness-->Privacy concerns	-0.04	0.03	932.70	-10.97*
CLIENT TYPE = Entry Level				
Job-relatedness-->Fairness	0.25	0.01	4149.96	20.45*
User-friendliness-->Fairness	0.57	0.02	4149.33	31.69*
User-friendliness-->Privacy concerns	-0.53	0.02	4139.66	-35.32*

* $p<.05$.

Table 8

Coefficients for Initial Applicant Perceptions Mediating the Relationship between Perceived Procedure Characteristics and Test Scores

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. effect (ME)	*SE* ME	*z*	%
Job-relatedness-->Privacy concerns-->Situational test score	-0.22	0.01	0.05	0.02	-0.01	0.00[a]	-2.34*	16.20
Job-relatedness-->Privacy concerns-->Personality test score	-0.22	0.01	-0.28	0.02	0.06	0.01	10.94*	30.01
Job-relatedness-->Privacy concerns-->BE test score	-0.22	0.01	-0.10	0.02	0.02	0.01	3.91*	23.13
Testing environment-->Privacy concerns-->Situational test score	-0.04	0.01	0.05	0.02	0.00[a]	0.00[a]	-2.07*	20.56
Testing environment-->Privacy concerns-->Personality test score	-0.04	0.01	-0.28	0.02	0.01	0.00[a]	4.12*	11.14
Testing environment-->Privacy concerns-->BE test score	-0.04	0.01	-0.10	0.02	0.00[a]	0.00[a]	2.94*	7.39
Testing environment-->Fairness-->Situational test score	0.05	0.01	*-0.01*	*0.02*	0.00[b]	0.00[b]	-0.35	3.38
Testing environment-->Fairness-->Personality test score	0.05	0.01	*0.02*	*0.02*	0.00[b]	0.00[b]	0.78	0.77
Testing environment-->Fairness-->BE test score	0.05	0.01	*-0.02*	*0.02*	0.00[b]	0.00[b]	-1.02	2.10

Note. BE refers to the Background Experience test score composite. *Italicized* values represent non-significant paths in the indirect effect. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05.

Table 9

Coefficients for Initial Applicant Perceptions Mediating the Relationship between Perceived Procedure Characteristics and Test Scores: Client Type Moderation

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. Effect (ME)	*SE* ME	*z*	%	Mod. effect
CLIENT TYPE = Leader Level									
User-friendliness-->Privacy concerns-->Situational	-0.04	0.03	0.05	0.02	0.00[a]	0.00[a]	-1.01	10.51	2.15*
User-friendliness-->Privacy concerns-->Personality	-0.04	0.03	-0.28	0.02	0.01	0.01	1.11	4.11	-8.61*
User-friendliness-->Privacy concerns-->BE	-0.04	0.03	-0.10	0.02	0.00[a]	0.00[a]	1.08	15.70	-4.08*
User-friendliness-->Fairness-->Situational	0.37	0.04	*-0.01*	*0.02*	0.00[a]	0.01	-0.35	13.02	na
User-friendliness-->Fairness-->Personality	0.37	0.04	*0.02*	*0.02*	0.01	0.01	0.79	2.14	na
User-friendliness-->Fairness-->BE	0.37	0.04	*-0.02*	*0.02*	-0.01	0.01	-1.04	33.69	na
Job-relatedness-->Fairness-->Situational	0.36	0.03	*-0.01*	*0.02*	0.00[a]	0.01	-0.35	3.30	na
Job-relatedness-->Fairness-->Personality	0.36	0.03	*0.02*	*0.02*	0.01	0.01	0.79	2.56	na
Job-relatedness-->Fairness-->BE	0.36	0.03	*-0.02*	*0.02*	-0.01	0.01	-1.05	8.15	na

Note. Situational, Personality, and BE refer to the Situational, Personality and Background Experience test score composites, respectively. *Italicized* values represent non-significant paths in the indirect effect. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. The Moderating Effect is a z-score representing moderation of the entire mediating pathway by client type, and was calculated using a formula from Cohen et al. (2003). 0.00^{a} represents effects that are less than .01, but greater than .001. 0.00^{b} represents effects that are less than .001 but greater than .00.

*$p<.05$.

Table 9 continued

Coefficients for Initial Applicant Perceptions Mediating the Relationship between Perceived Procedure Characteristics and Test Scores: Client Type Moderation

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. Effect (ME)	*SE* ME	*z*	%	Mod. effect
CLIENT TYPE = Entry Level									
User-friendliness-->Privacy concerns-->Situational	-0.53	0.02	0.05	0.02	-0.03	0.01	-2.34*	147.64	-2.15*
User-friendliness-->Privacy concerns-->Personality	-0.53	0.02	-0.28	0.02	0.15	0.01	11.52*	36.83	8.61*
User-friendliness-->Privacy concerns-->BE	-0.53	0.02	-0.10	0.02	0.05	0.01	3.93*	35.23	4.08*
User-friendliness-->Fairness-->Situational	0.57	0.02	*-0.01*	*0.02*	0.00[a]	0.01	-0.35	20.22	na
User-friendliness-->Fairness-->Personality	0.57	0.02	*0.02*	*0.02*	0.01	0.01	0.79	2.12	na
User-friendliness-->Fairness-->BE	0.57	0.02	*-0.02*	*0.02*	-0.01	0.01	-1.05	8.36	na
Job-relatedness-->Fairness-->Situational	0.25	0.01	*-0.01*	*0.02*	0.00[a]	0.00[a]	-0.35	2.31	na
Job-relatedness-->Fairness-->Personality	0.25	0.01	*0.02*	*0.02*	0.00[a]	0.00[a]	0.79	1.79	na
Job-relatedness-->Fairness-->BE	0.25	0.01	*-0.02*	*0.02*	-0.01	0.01	-1.05	5.71	na

Note. Situational, Personality, and BE refer to the Situational, Personality and Background Experience test score composites, respectively. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME; values over 100% indicate suppression. The Moderating Effect is a z-score representing moderation of the entire mediating pathway by client type, and was calculated using a formula from Cohen et al. (2003). 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05.

Table 10

Coefficients for Perceived Procedure Characteristics Mediating the Relationship between Actual Test Administration Conditions and Initial Applicant Perceptions

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. effect (ME)	*SE* ME	*z*	%
AC(proc/alone)-->Job-relatedness-->Privacy concerns	0.11	0.03	-0.22	0.01	-0.02	0.01	-3.27*	na
AC(unproc/others)-->Testing environment-->Privacy concerns	-0.46	0.07	-0.04	0.01	0.02	0.00[a]	4.02*	na
AC(unproc/others)-->Testing environment-->Fairness	-0.46	0.07	0.05	0.01	-0.02	0.01	-3.92*	na

Note. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. na - not applicable because the total effect was not significant. 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05

Table 11

Coefficients for Perceived Procedure Characteristics Mediating the Relationship between Actual Test Administration Conditions and Initial Applicant Perceptions: Client Type Moderation

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. effect (ME)	*SE* ME	*z*	%	Mod. effect
CLIENT TYPE = Leader level									
AC(proc/alone)-->Job-relatedness-->Fairness	0.11	0.03	0.36	0.03	0.04	0.01	3.19*	na	0.79
AC(unproc/others)-->User-friendliness-->Privacy concerns	-0.13	0.04	-0.37	0.04	0.05	0.02	2.79*	na	-0.71
AC(unproc/others)-->User-friendliness-->Fairness	-0.13	0.04	0.37	0.04	-0.05	0.02	-2.75*	na	0.86
CLIENT TYPE = Entry level									
AC(proc/alone)-->Job-relatedness-->Fairness	0.11	0.03	0.25	0.01	0.03	0.01	3.26*	na	-0.79
AC(unproc/others)-->User-friendliness-->Privacy concerns	-0.13	0.04	-0.53	0.02	0.07	0.02	2.88*	na	0.71
AC(unproc/others)-->User-friendliness-->Fairness	-0.13	0.04	0.57	0.02	-0.07	0.03	-2.87*	na	-0.86

Note. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. The Moderating Effect is a z-score representing moderation of the entire mediating pathway by client type, and was calculated using a formula from Cohen et al. (2003). na - not applicable because the total effect was not significant.

*p<.05

Table 12

Coefficients for Perceived Procedure Characteristics Mediating the Relationship between Actual Test Administration Condition and Test Scores

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. Effect (ME)	*SE* ME	*z*	%
AC(proc/alone)-->Job-relatedness-->Situational	0.11	0.03	-0.06	0.01	-0.01	0.00[a]	-2.68*	2.02
AC(proc/alone)-->Job-relatedness-->Personality	0.11	0.03	0.22	0.01	0.02	0.01	3.23*	19.86
AC(proc/alone)-->Job-relatedness-->BE	0.11	0.03	0.10	0.02	0.01	0.00[a]	2.95*	2.90
AC(unproc/others)-->User-friendliness-->Situational	-0.13	0.04	*0.01*	*0.02*	0.01	0.01	-0.75	na
AC(unproc/others)-->User-friendliness-->Personality	-0.13	0.04	0.26	0.05	-0.03	0.01	-2.49*	26.87
AC(unproc/others)-->Testing environment-->Situational	-0.46	0.07	*-0.01*	*0.01*	0.01	0.01	1.08	na

Note. BE refers to the Background Experience test score composite. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. Note. Italicized values represent non-significant paths in the indirect effect. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. na - not applicable because the total effect was not significant. 0.00^{a} represents effects that are less than .01, but greater than .001. 0.00^{b} represents effects that are less than .001 but greater than .00.

*p<.05.

Table 13

Coefficients for Perceived Procedure Characteristics Mediating the Relationship between Actual Test Administration Condition and Test Scores: Client Type Moderation

IV-->MV-->DV	a	*SE* a	b	*SE* b	Med. effect (ME)	*SE* ME	*z*	%	Mod. Effect
CLIENT TYPE = Leader level									
AC(unproc/others)-->UF-->BE	-0.13	0.04	*0.02*	*0.02*	0.00[a]	0.00[a]	-1.31	0.57	2.10*
AC(unproc/others)-->TE-->Personality	-0.46	0.07	0.09	0.03	-0.04	0.02	-2.64*	33.91	-2.19*
CLIENT TYPE = Entry level									
AC(unproc/others)-->UF-->BE	-0.13	0.04	0.14	0.02	-0.02	0.01	-2.59*	21.47	-2.10*
AC(unproc/others)-->TE-->Personality	-0.46	0.07	*0.01*	*0.01*	0.00[a]	0.01	-0.64	3.43	2.19*

Note. BE (Background Experience) and Personality refer to test score composites. TE and UF reference the perceived quality of the Testing Environment and User-friendliness/efficiency, respectively. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. *Italicized* values represent non-significant paths in the indirect effect. Column "a" contains the regression coefficients between the IV and MV. Column "b" contains partial regression coefficients between the MV and DV. The Mediating Effect (ME) is the product of the IV to MV and the MV to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. The Moderating Effect is a z-score representing moderation of the entire mediating pathway by client type, and was calculated using a formula from Cohen et al. (2003). 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05.

Table 14

Coefficients for Perceived Procedure Characteristics and Initial Applicant Perceptions Mediating the Relationship between Actual Test Administration Condition and Test Scores

IV→MV1→MV2→DV	a	*SE* a	b	*SE* b	c	*SE* c	Med. effect (ME)	*SE* ME	z	%
AC(proc/alone)-->JR-->Privacy-->Situational	0.11	0.03	-0.22	0.01	0.04	0.02	0.00[b]	0.00[b]	-1.71	0.32
AC(proc/alone)-->JR-->Privacy-->Personality	0.11	0.03	-0.22	0.01	-0.29	0.02	0.01	0.00[a]	3.17*	5.86
AC(proc/alone)-->JR-->Privacy-->BE	0.11	0.03	-0.22	0.01	-0.11	0.02	0.00[a]	0.00[b]	2.64*	1.40
AC(proc/alone)-->JR-->Fairness-->Situational	0.11	0.03	0.27	0.01	*-0.01*	*0.02*	0.00[b]	0.00[b]	-0.52	0.09
AC(proc/alone)-->JR-->Fairness-->Personality	0.11	0.03	0.27	0.01	*0.01*	*0.02*	0.00[b]	0.00[b]	0.57	0.28
AC(proc/alone)-->JR-->Fairness-->BE	0.11	0.03	0.27	0.01	*-0.02*	*0.02*	0.00[b]	0.00[a]	-1.13	0.39
AC(unproc/others)-->UF-->Privacy-->Situational	-0.13	0.04	-0.50	0.01	0.04	0.02	0.00[a]	0.00[a]	1.69	na
AC(unproc/others)-->UF-->Privacy-->Personality	-0.13	0.04	-0.50	0.01	-0.29	0.02	-0.02	0.01	-3.06*	14.92
AC(unproc/others)-->UF-->Privacy-->BE	-0.13	0.04	-0.50	0.01	-0.11	0.02	-0.01	0.00[a]	-2.58*	1.39
AC(unproc/others)-->UF-->Fairness-->Situational	-0.13	0.04	0.53	0.02	*-0.01*	*0.02*	0.00[b]	0.00[a]	0.52	na
AC(unproc/others)-->UF-->Fairness-->Personality	-0.13	0.04	0.53	0.02	*0.01*	*0.02*	0.00[b]	0.00[a]	-0.57	0.60
AC(unproc/others)-->UF-->Fairness-->BE	-0.13	0.04	0.53	0.02	*-0.02*	*0.02*	0.00[a]	0.00[a]	1.12	0.33

Note. UF and JR refer to perceptions of User-friendliness/efficiency and Job-relatedness, respectively. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. Values in *italics* represent a non-significant path in the indirect effect. Column "a" contains the regression coefficients between the IV and MV1; column "b" contains the partial coefficient between MV1 and MV2; column "c" contains the partial coefficient between MV2 and DV. The Mediating Effect (ME) is the product of the IV to MV1, MV1 to MV2, and MV2 to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. na - not applicable because the total effect was not significant. 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05.

Table 14 continued

Coefficients for Perceived Procedure Characteristics and Initial Applicant Perceptions Mediating the Relationship between Actual Test Administration Condition and Test Scores

IV→MV1→MV2→DV	a	*SE* a	b	*SE* b	c	*SE* c	Med. effect (ME)	*SE* ME	z	%
AC(unproc/others)-->TE-->Privacy--> Situational	-0.46	0.07	-0.04	0.01	0.04	0.02	0.00[b]	0.00[b]	1.79	na
AC(unproc/others)-->TE-->Privacy--> Personality	-0.46	0.07	-0.04	0.01	-0.29	0.02	-0.01	0.00[a]	-3.83*	4.31
AC(unproc/others)-->TE-->Privacy--> BE	-0.46	0.07	-0.04	0.01	-0.11	0.02	0.00[a]	0.00[b]	-2.99*	0.40
AC(unproc/others)-->TE-->Fairness--> Situational	-0.46	0.07	0.05	0.01	*-0.01*	*0.02*	0.00[b]	0.00[b]	0.52	na
AC(unproc/others)-->TE-->Fairness--> Personality	-0.46	0.07	0.05	0.01	*0.01*	*0.02*	0.00[b]	0.00[b]	-0.57	0.20
AC(unproc/others)-->TE-->Fairness--> BE	-0.46	0.07	0.05	0.01	*-0.02*	*0.02*	0.00[b]	0.00[b]	1.15	0.11

Note. TE references perceived quality of the testing environment. Reference group for actual test administration condition (AC) as an IV is unproctored/alone. Values in *italics* represent a non-significant path in the indirect effect. Column "a" contains the regression coefficients between the IV and MV1; column "b" contains the partial coefficient between MV1 and MV2; column “c” contains the partial coefficient between MV2 and DV. The Mediating Effect (ME) is the product of the IV to MV1, MV1 to MV2, and MV2 to DV relationships. Z scores represent the significance of the mediating effect (Sobel, 1982). % represents the percent of the total effect between the IV and DV accounted for by the ME. na - not applicable because the total effect was not significant. 0.00[a] represents effects that are less than .01, but greater than .001. 0.00[b] represents effects that are less than .001 but greater than .00.

*p<.05.

Figure 1. Proposed model of applicant perceptions in Internet-based testing.